

SOUTHERN PLAINS CLIMATE HUB

SUMMARY OF INPUT AND CONCLUSIONS

USDA BUILDING BLOCKS FOR CLIMATE
ACTION AND CLIMATE MITIGATION
MEETINGS IN KANSAS, OKLAHOMA, &
TEXAS

MAY 16, 2016

OVERVIEW

10 BUILDING BLOCKS FOR CLIMATE ACTION & MEETINGS TO DATE

The input and outcomes included in this report are based on the following “Building Blocks”, outlined by US Secretary of Agriculture Tom Vilsack.

- + **Soil Health:** Improve soil resilience and increase productivity by promoting conservation tillage and no-till systems, planting cover crops, planting perennial forages, managing organic inputs and compost application, and alleviating compaction. For example, the effort aims to increase the use of no-till systems to cover more than 100 million acres by 2025.
- + **Nitrogen Stewardship:** Focus on the right timing, type, placement and quantity of nutrients to reduce nitrous oxide emissions and provide cost savings through efficient application.
- + **Livestock Partnerships:** Encourage broader deployment of anaerobic digesters, lagoon covers, composting, and solids separators to reduce methane emissions from cattle, dairy, and swine operations, including the installation of 500 new digesters over the next 10 years.
- + **Conservation of Sensitive Lands:** Use the Conservation Reserve Program (CRP) and the Agricultural Conservation Easement Program (ACEP) to reduce GHG emissions through riparian buffers, tree planting, and the conservation of wetlands and organic soils. For example, the effort aims to enroll 400,000 acres of lands with high greenhouse gas benefits into the Conservation Reserve Program.
- + **Grazing and Pasture Lands:** Support rotational grazing management on an additional 4 million acres, avoiding soil carbon loss through improved management of forage, soils and grazing livestock.
- + **Private Forest Growth and Retention:** Through the Forest Legacy Program and the Community Forest and Open Space Conservation Program, protect almost 1 million additional acres of working landscapes. Employ the Forest Stewardship Program to cover an average of 2.1 million acres annually (new or revised plans), in addition to the 26 million acres covered by active plans.
- + **Stewardship of Federal Forests:** Reforest areas damaged by wildfire, insects, or disease, and restore forests to increase their resilience to those disturbances. This includes plans to reforest an additional 5,000 acres each year.
- + **Promotion of Wood Products:** Increase the use of wood as a building material, to store additional carbon in buildings while offsetting the use of energy from fossil fuel.
- + **Urban Forests:** Encourage tree planting in urban areas to reduce energy costs, storm water runoff, and urban heat island effects while increasing carbon sequestration, curb appeal, and property values. The effort aims to plant an additional 9,000 trees in urban areas on average each year through 2025.
- + **Energy Generation and Efficiency:** Promote renewable energy technologies and improve energy efficiency. Through the Energy Efficiency and Conservation Loan Program, work with utilities to improve the efficiency of equipment and appliances. Using the Rural Energy for America Program, develop additional renewable energy opportunities. Support the National On-Farm Energy Initiative to improve farm energy efficiency through cost-sharing and energy audits.

Additionally, Secretary Vilsack outlined the strategy for implementing these concepts would be based on these 5 principles:

- **Voluntary and incentive-based:** Farmers, ranchers, and forest land owners are stewards of the land. USDA has a track record of successful conservation through voluntary programs designed to provide technical assistance for resource management. These efforts fit within USDA's approach of "cooperative conservation."
- **Focused on multiple economic and environmental benefits:** To be successful, the proposed actions should provide economic and environmental benefits through efficiency improvements, improved yields, or reduced risks.
- **Meet the needs of producers:** This strategy is designed for working farms, ranches, forests, and production systems. USDA will encourage actions that enhance productivity and improve efficiency.
- **Cooperative and focused on building partnerships:** USDA will seek out opportunities to leverage efforts by industry, farm groups, conservation organizations, municipalities, public and private investment products, tribes, and states.
- **Assess progress and measure success:** USDA is committed to establishing quantitative goals and objectives for each building block and will track and report on progress.

After the announcement was made, the newly formed USDA Climate Hubs were asked to communicate and share this new information to the agencies of the USDA and other important stakeholder agencies and organizations within each Hub's borders while asking for input and feedback from that audience. The Southern Plains Climate Hub chose to approach this task by holding one in-person meeting in each state. As the meetings progressed, the agenda was adapted and altered to focus more on audience interaction and input. The following report reflects the diversity and the commonalities among the findings from each state's meeting.

KANSAS

USDA-NRCS CONFERENCE CENTER, SALINA, AUGUST 27TH, 2015

OVERVIEW

The first of three meetings, the outcomes from the meeting held in Kansas were the most unique. Since the agenda focused more heavily on information sharing, unfortunately the amount of audience interaction wasn't given as much time as meetings that followed. However, even in the short time for questions after presentations and discussion at the conclusion of the meeting, the quality of the questions and conversations made this an exceptional meeting.

As opposed to the other two meetings, the interactive portion of the meeting in Kansas, outlined in the "Key Areas of Discussion", focused on what participants saw as the greatest challenges they and their agencies/organizations would face due to climate change and its effects. Additionally, the Building Blocks

were discussed as a way to find more ways to encourage interagency communication and cooperation in the USDA. Participants then discussed what obstacles they encounter or potential areas of improvement for increasing the ability of USDA agencies to better serve their customers and communities as a whole. That discussion is described in the “Implementation: Steps Towards Action”.

KEY AREAS OF DISCUSSION

+ WATER QUALITY & QUANTITY CONCERNS

1. Loss of riparian areas on water quality and streamflow
2. Extreme fluctuations in water quality tied to more intense weather events
3. Decreased water quantity impacts on livestock
 - a. Increased temperatures causing algae blooms
4. Increasing industrial consumption demands
 - b. Hydraulic fracturing
 - c. New construction
5. Availability of clean water for irrigation purposes
6. Intense weather events’ impacts on road conditions and roadside erosion
 - d. Damage caused by flooding
7. Aquifer depletion and recharge issues
8. Economic impact of decreased quantity and degraded quality on rural areas
 - e. Especially areas where water sources are used for both consumption and recreational purposes.
 - i. Increase cost of treating water, aging infrastructure
 - ii. Decreased tourism income in small towns
9. Link between quantity and quality that can have a significant impact on crop production

+ IMPACTS OF EXTREME WEATHER BEING WORSENERD BY CLIMATE CHANGE

1. Shifts in growing seasons and ability to grow the same crops
2. Economic impact on infrastructure
 - a. Roads, bridges
 - b. Water well contamination
 - c. Accidental releases of pollutants due to heavy rain events
 - i. Negatively impacting endangered species and possible consequences
3. Species viability
4. Deteriorating tree and root system health from prolonged drought and invasive species issues
5. Geological stress caused by low water tables
6. Natural resource, personal, and economic impacts caused by the severity and timing of hydrological events
7. Public health concerns associated with temperature extremes
 - a. Vulnerable populations especially susceptible to negative health impacts as well as the general population
8. Ability of agriculture as an industry to adapt to the extremes
9. Increased need for crop treatments and the economic and environmental impacts of those treatments
10. Land loss

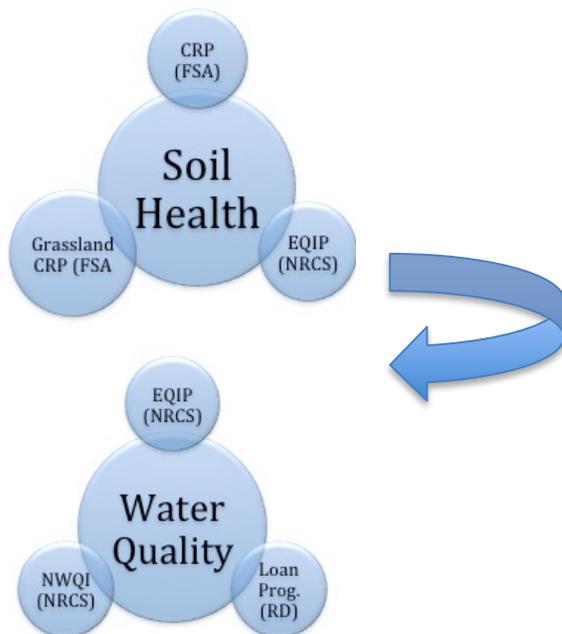
+ CLIMATE CHANGE AND SOIL HEALTH

1. Prolong droughts' negative impacts on soil temperature, nutrients, moisture levels, water holding capacity, and biodiversity
2. Fire made less controllable by weather conditions and the loss of vegetation creating conditions that deteriorate the health of the soil
3. Fungus and mold having a negative impact of the physical composition of soils
4. Human infrastructure infringing on healthy soils, i.e. roads, suburban sprawl/overdevelopment, and the increased water demands associated with that activity
5. Increased or decreased snow melt on soil moisture, erosion, and temperature
6. Extreme temperatures causing a decrease in biodiversity and microbial activity in already unhealthy, unprepared soils

IMPLEMENTATION: STEPS TOWARDS ACTION

+ POTENTIAL AREAS OF COLLABORATION

- + USDA Programs and participant identified interconnectivity between programs, illustrated here:



+ OBSTACLES AND AREAS OF IMPROVEMENT

1. Ongoing monitoring of program outcomes
2. Program qualification process
 - a. Ranking based on deficiencies vs. rankings based on overall quality of outcomes
3. Financial assistance to individual producers through Farm Bill programs
 - a. Are agencies looking at whole-farm health and efficiency or is the funding prioritization process outdated?
 - b. Would increased agency communication/cooperation lead to greater impacts on more land?
 - i. Increased incentive to implement conservation practices through compliance requirement for federal crop insurance.

- ii. Rural Development and NRCS working to identify PL-566 structures that, combined with land-use practices, could be upgraded at a lower cost than newly constructed water treatment facilities to serve as additional/backup municipal water supplies for rural communities across the country.
- + POTENTIAL EFFORTS TO TRACK PROGRESS TOWARDS ADAPTABILITY AND POTENTIAL MITIGATION BENEFITS OF CERTAIN PRACTICES
1. Data collection and sharing
 - a. Identifying what data could be useful and determining how best to approach collection
 - b. Determining how to share data between and among USDA agencies while upholding privacy standards and data integrity
 - c. Ability to share certain types of data could help build the case for ecosystem crediting by providing an accurate comparison of adoption/maintenance rates and outcome projections
 2. Tracking maintenance of conservation practices beyond the period of direct financial assistance
 3. Conducting small-scale, on-the-ground verification to determine the effectiveness of Farm Bill programs and their ability to provide the specific outcomes identified in the Building Blocks document
 - a. A way to lend credibility to claims of mitigation or positive environmental impacts
 - b. Could be done as a way to support tools such as COMET-Planner that use broader data to reflect potential outcomes associated with practices
 - c. Could continually build on the body of knowledge used to establish and improve best practices

CONCLUSION

An ongoing focus on the health of our nation's soils and the impact those have on the ecosystems they support and depend upon is vital to USDA and American agriculture in the future.

OKLAHOMA

REDLANDS COMMUNITY COLLEGE CONFERENCE CENTER, EL RENO, OK
SEPTEMBER, 2015

OVERVIEW

After the initial meeting, planners regrouped to determine how the audience could be allowed more opportunities to participate in the conversation, in addition to the presentations made by USDA partners. In order to accomplish this, individual group sessions were worked into the agenda throughout the day to get continual input. During these sessions, moderators used each of the building blocks to guide the discussion and talked about the USDA Farm Bill programs their agencies and other state, federal, and NGO partners have currently that could be used to support the goals of each building block. After that, the audience discussed additional tools or resources USDA agencies and their partners could use to further advance the goals for climate action.

USDA PROGRAMS & BUILDING BLOCKS

1. SOIL HEALTH

- a. NRCS
 - i. Technical assistance
 - ii. EQIP
 - iii. CSP
 - iv. Soil Health Initiative
- b. Extension & Land Grant Universities
 - i. Research
 - ii. Local level outreach & education through demonstration
- c. RMA
 - i. Federal crop insurance products
 - ii. New “Whole Farm” crop insurance policies
 - iii. Conservation compliance
- d. Noble Foundation
 - i. Soil Renaissance
- e. EPA
 - i. Section 319 Clean Water Act for nonpoint source reduction through cost share
- f. State Conservation Agency
 - i. Administration of EPA 319 program
 - ii. Educational workshops about soil health
 - iii. State cost share program
- g. Local Conservation Districts & State Association of Conservation Districts
 - i. Administration of state cost share program
 - ii. Making soil health a top priority for district administered program ranking/funding
 - iii. RCPP funds received to establish demonstration farms

2. NITROGEN STEWARDSHIP

- a. NRCS
 - i. Technical assistance
 - ii. EQIP
 - iii. Greenhouse Gas (GHG) Initiative

- b. Rural Development
 - i. Waste Management program
 - c. ARS & Universities
 - i. Ongoing research about nitrogen efficiency, uptake, and application needs
 - d. Multiple federal, state, and local partners
 - i. Promotion of green seeker technology
- 3. LIVESTOCK PARTNERSHIPS**
- a. Rural Development & Rural Utility Service
 - i. Rural Energy for America Program
 - ii. Loan programs for anaerobic digesters
 - b. NRCS
 - i. Cost share funds for lagoon covers through waste management program
 - ii. EQIP funds available for composters
 - c. Federal, State, and Local partnership
 - i. Poultry litter collection and application
- 4. CONSERVATION OF SENSITIVE LANDS**
- a. FSA
 - i. CRP
 - ii. Flexibility allowed by most recent Farm Bill to accommodate resource needs that may arise due to unforeseen events (i.e.- emergency haying/grazing on CRP lands during 2014 drought)
 - iii. CREP
 - b. NRCS
 - i. CSP
 - ii. RCPP
 - iii. ACEP
 - c. State and Local partners
 - i. Administration of EPA 319 funds through state cost share program
- 5. GRAZING AND PASTURE LANDS**
- a. FSA
 - i. Grazing Lands Reserve Program
 - ii. CRP
 - b. NRCS
 - i. EQIP
 - ii. CSP
 - iii. Ecological site prescriptions
 - c. ARS, NIFA, & Universities
 - i. Research
 - ii. Southern Plains Hub is housed at the National Grazinglands Research Laboratory at Ft. Reno
 - d. Federal, state, and local efforts
 - i. Oklahoma Prescribed Burn Council
- 6. PRIVATE FOREST GROWTH & RETENTION**
- a. NRCS
 - i. EQIP
 - b. USFS/State Forestry Dept.
 - i. Forest management plans
- 7. STEWARDSHIP OF FEDERAL FORESTS**
- a. APHIS
 - i. Various programs for pest and invasive species control

8. PROMOTION OF WOOD PRODUCTS

- a. RC&D Councils (OK still has some active, self-funded councils)
- b. State efforts
 - i. Red cedar registry
 - 1. Education efforts to discourage use of Eastern Red Cedar (ERC) in landscaping in order to curb invasion/overproduction
 - ii. Legislation gives purchasing preference to ERC mulches and other products from cedar for state highway, construction, landscaping, and other projects

9. URBAN FORESTS

- a. Oklahoma Department of Agriculture
 - i. Tree bank
- b. Universities
 - i. Research to identify and/or develop most resilient species for the state and avoid excessive tree loss to drought in urban areas
- c. US Forest Service
 - i. Hosting and participating in events in urban areas (i.e. home and garden shows, OK State and Tulsa State Fairs) to distribute saplings and care information to increase populations in urban areas
 - ii. Work done with Parks Service to address the shortage of trees in the state parks

10. ENERGY GENERATION AND EFFICIENCY

- a. NRCS
 - i. Technical assistance
 - ii. EQIP
 - iii. CSP
 - iv. Energy Audits
- b. Rural Development
 - i. REAP
 - ii. RD Loan/Financing Programs for counties and municipalities
 - iii. Financing to enhance irrigation system efficiency
- c. ARS, NIFA, & Universities
 - i. Biodiesel research
- d. FSA
 - i. Biomass Crop Assistance Program
 - ii. Biofuel Infrastructure Partnership
 - iii. Feedstock Flexibility Program for Bioenergy Producers
- e. Federal, State, Local partnership
 - i. Poultry litter collection, transport, and application program

IMPLEMENTATION: IDENTIFYING NEEDS AND ACTION ITEMS

+ RESEARCH LINKING PROGRAMS AND BUILDING BLOCK GOALS

NOTE: The following were not identified as areas where research is insufficient or none is being done, but are topics that were identified as ones that could be compiled to show how the findings and outcomes of said research could/would support the goals identified within each building block.

- Cover crops, sustainable rotations, cost benefit analysis of digesters, land use practices as a way to decrease water treatment costs for small towns, municipalities, and counties, invasive species control to increase soil health and water availability, link between climate changes and pest/invasive species infestations

- An area that was identified as being very critically and urgently needed is research about the number of impacts of “soil farming” or the application of discarded oil drilling “mud” and fluids and the effects they have on overall soil health, soil microbial and biological activity, potential water quality implications due to run-off, and a range of other issues associated with this activity.

- Another area of needed research is whether or not the implementation of soil health practices and diversified systems of production on farms will strengthen their overall production system against extreme weather events enough to decrease the likelihood that landowners will file crop insurance claims. This research could result in the ability of RMA to work with NRCS, FSA, and other agencies to offer incentives through the crop insurance program to producers implementing and maintaining soil health practices.

* ACTION ITEMS AND AREAS FOR ADMINISTRATION CONSIDERATION TO SUCCESSFULLY ACHIEVE BUILDING BLOCK GOALS

1. NRCS identified a lack of certified auditors and funding to complete on-farm energy audits.
2. Potential partnership between NRCS’s small watersheds program (PL-566) and Rural Development to decrease the overall costs to municipalities and provide back up water supplies during times of drought for small communities unable to fund larger projects.
3. Develop a pilot project to form a partnership between RMA, NRCS, and FSA to share information about practices adopted and maintained, yield, and the potential increase in a producer’s financial viability/sustainability, therefore decreasing their overall burden on federally subsidized crop insurance.

CONCLUSION

Farm programs need to start shifting away from focusing on problems as they come up and finding a prescription for problems on a case-by-case basis and start finding ways that farm programs can function as whole-system preventative care support to harden American agriculture against the extreme weather events that will come with a changing climate and ensure customers have the best chance of being able to maintain profitability while protecting the environment at the same time, thus ensuring a truly sustainable agriculture system for generations to come.

TEXAS

NRCS CENTRAL TECHNOLOGY CENTER, FORT WORTH, OCTOBER 27, 2015

OVERVIEW

Just as in Oklahoma, this meeting allowed participants more opportunities to participate in the conversation, in addition to the presentations made by USDA partners, through group sessions worked into the agenda throughout the day. During these sessions, moderators again used each of the building blocks to guide the discussion and the group talked about programs that federal, state, local, and NGO partners can utilize to support reaching the goals of each building block. At the Texas meeting, participants were able to discuss more topics related to forestry and spent a considerable amount of time having interactive conversations about how USDA agencies and their partners could more efficiently work together and support one another. Please note, in order to reduce the length of the report, the “USDA Programs & Building Blocks” section, which was very similar in both Oklahoma and Texas, is not being replicated in both states’ reports but was discussed and similar programs and points were made in both states.

In Texas, participants provided careful consideration and well thought out input about how USDA can communicate the goals of the building blocks internally in the agency and how that internal communication would effect how local, state, and regional level employees perceived the building blocks. This led the group to the conclusion that effective communication and training would determine how receptive employees would be to reaching program goals tied to climate change. And successful communication and training planning that will determine the success employees have in assisting customers and cooperators with the implementation of practices necessary to reach the goals set out by the Secretary.

THE MESSAGE AND THE VOIDS

* HOW CAN WE USE THE BUILDING BLOCKS TO BETTER COMMUNICATE WITH USDA’S PRIMARY CUSTOMERS

- Most effective tool to drive behavior or management changes is the ability to communicate real life, close-to-home success stories. A key part of this story telling is to include both successes and obstacles that were overcome to achieving the outcome.

- Identify what information is relevant to decision makers and how that information aligns with the building blocks.

- When communicating about goals, whether ones to be or already met, maintaining consistency in metrics is very important. There are a number of different paths that will lead to the same goal within these building blocks; so training employees to measure outcomes in the same metrics will greatly reduce confusion. For example, if agency employees are accustomed to measuring success based on number of acres enrolled in a program, then two states could convert 10,000 acres to no-till in a given year and would both measure that as a “successful outcome”. However, if carbon sequestration and avoided emissions are the measure of success, 10,000 acres being converted to no-till in Oregon would have a very different outcome than 10,000 acres being converted in Arizona. So the metrics for success should be clearly defined and methodology for tracking progress consistent from state to state when training and communicating agency employees.

- Use the building blocks as an opportunity to identify and close the gap between research being conducted and funded by USDA and the end users by taking the findings of the most up to date research and using them to focus in on systems-based approaches to agriculture management.

- Both internally at USDA and the general public have some ingrained misperceptions of agriculture, farm programs, climate change, and the impact agriculture has on the environment. If not handled correctly, pointing out misperceptions can create conflict but by communicating and training USDA employees to start from a common place, meet those you are working with where they are to establish shared goals, and using real life successes to identify common ground and motivate change, those misperceptions can start to change without direct confrontation.

~Identifying the root of the misperceptions is also important. The following are just a few of the topics discussed at the meeting that have led to some of them: lack of knowledge created by being “a generation or more removed from the farm”, market influences driven to sell products at a premium without research to back up the claims of positive benefits, globalization of the food supply gives consumers unrealistic expectations, a lack of understanding about the level of investment required to make changes in management and the financial risk associated with doing something “different than the way its always been done”

- Capitalize on the increased attention being paid to and desire to learn about food and food production, the local food movement, know your farmer, know your food, etc. as a way to educate and close the knowledge gaps identified above.

- Building Blocks could present an opportunity to increase access to USDA farm programs that is currently lacking for the smaller sized farms and agriculture ventures.

- Use this as an opportunity to improve communication between agencies with a focus on more open access to information, making sure agencies are on the same page, and working together to make the most out of and strengthen the resources of each agency.

- Use this as an opportunity to improve cooperators’ knowledge of USDA programs.

IMPLEMENTATION: POINTS TO REMEMBER

1. Use “attention grabbers” when communicating to end-users.
2. Increase focus on systems-based approaches.
3. Discuss the impacts of variability when using localized success stories to encourage changes in management systems.
4. USDA, as a whole, should work towards pragmatic program flexibility to increase communication and coordination between agencies.

CONCLUSION

Developing clear, concise, consistent metrics and progress tracking will be key to gaining buy-in from all levels of USDA employees. By giving state and regional leaders the proper tools and training to communicate and accomplish the goals laid out in the initial building block document, USDA has the opportunity to increase inter-agency communication and cooperation and, by doing that, will realize outcomes that can be verified and make great strides towards helping agriculture clearly communicate and share all of the positive benefits it has on our environment today and in the future.

LEADERSHIP

DARLINGTON CHAPEL AT REDLANDS, EL RENO, OK, MAY 18, 2016

OVERVIEW

Just days after Secretary Vilsack announced the results of USDA's efforts to implement the goals set out in the Building Blocks for Climate Smart Agriculture and Forestry, leaders of USDA agencies and partner organizations from all three Southern Plains states gathered to review the findings of each meeting and discuss steps forward. In addition to individual state objectives, participants were successful in finding ways that Kansas, Oklahoma, and Texas can work together, share information and support the implementation of the building blocks more effectively by linking them to existing programs and activities.

The meeting agenda included the following:

- * A review and discussion of the findings from each individual state meeting
- * USDA Regional Response to Climate Change's Challenges: the response of USDA in the region to addressing issues related to climate change and how the existing authority could be better used to address these issues
- * Climate Change Communication: how is information about climate change currently being conveyed to agriculture producers and rural communities, what is working and where could we be doing better
- * What agency leaders are seeing and hearing: agency discussion about what they are hearing from clients, what clients are asking for, and how agencies are responding to the challenges and needs stemming from climate change
- * Building a Climate Smart USDA: How are agencies educating their staff internally about climate change and challenges, how is feedback given and received from the field to agency leadership, and what can the Southern Plains Climate Hub do to help facilitate those interactions or better serve the agencies and their clients

CLIMATE SMART AGRICULTURE IN THE SOUTHERN PLAINS

USDA Southern Plains Climate Hub, NRCS, Rural Development, RMA, and FSA representatives provided an overview of how each agency was handling the challenges of climate change, what programs within USDA's existing authority could and/or are being used to address those challenges and where there was room to improve response.

- * **USDA Southern Plains Climate Hub (SPCH)**
 - * Currently working to develop climate inclusive curriculum for USDA employee training
 - * The SPCH set this priority in response to surveys in the region that found USDA employees and their state and local partners expressed a general lack of confidence when asked to describe their ability/willingness to discuss or answer questions about the climate and climate change if asked by their clients or end users.
 - * Additionally, the Hub continues to identify ways to overcome the stigma of climate change and provide information in a way that doesn't create conflict.

- * The SPCH's new staffing structure has created a position for a fellow to conduct on-farm soil health research.
- * The Hub as part of ARS is partnering with Texas AgriLife to conduct climate related outreach to grazingland producers.
- * The SPCH is continuing and strengthening the tribal outreach efforts which include:
 - * Supporting and participating in the Arbuckle aquifer project
 - * Acting as the primary facilitator between USDA and the BIA to move discussions about soil health practices and leasing concerns forward and create opportunities to demonstrate the increased value to both lessee and lessor
- * **Risk Management Agency**
 - * In order to respond to the challenges caused by climate change, RMA uses their programs to strengthen the public/private partnership
 - * In the face of increased volatility in the climate, RMA is tailoring their products and programs to the needs of their individual clients and allow for more customization in policies by addressing a broader range of the perils covered by their insurance
 - * RMA has seen an increase in total loss claims as well as more diversity in the types of hazards leading to claims; they are seeing more losses caused by more types of extreme weather events and types of events occurring in areas where these claims haven't been made before.
 - * The agency is increasingly considerate of climate extremes while working diligently to provide products that are both sufficient financial safety nets and actuarially sound.
 - * One example of a recent extreme encountered in the Southern Plains region was loss claims made due to flooding from 2001-2014 made up roughly 25% of all claims. However, in 2015 alone, flooding claims alone made up over 50% of all loss claims made. This extreme presents a great example of how climate change is presenting ongoing challenges for the agency.
 - * In response, within their existing authority, RMA is now offering the "Whole Farm Revenue Protection" product
 - * This is a product that is more adaptive and a good option for producers exploring new practices in an attempt to mitigate or prepare for weather extremes by implementing an operation-wide soil health management system.
 - * This product also includes coverage for livestock and is easily customized to meet the needs of the individual operation.
 - * In conclusion, one area of improvement within USDA as a whole would be to focus on if and how agencies can more effectively share information and data among and between the individual agencies.
- * **Natural Resource Conservation Service**
 - * NRCS programs are focused on supporting and implementing climate-related adaptive strategies and the agency is working very diligently to **account** for the practices implemented through NRCS programs in an ongoing effort to support the Secretary's Climate Smart Agriculture initiative
 - * The Conservation Technical Assistance Program is the foundation of NRCS's work. The network and infrastructure that already exists within NRCS throughout the country is a huge asset to creating a climate smart agriculture industry. This network is already working to assist in accounting for agriculture's ability to adapt to the impacts of and mitigation of the causes of climate change

- * The agency deals a lot with the issues caused by the impact of climate change such as land fragmentation, energy costs, water availability, and swings in productivity but their clients don't usually associate these individual factors with climate change
- * Under existing authority, Secretary Vilsack appropriated an additional \$72 million of support to NRCS in order to fund 30 conservation practices in order to meet the goal outlined in 6 of the 10 building blocks. Three of which are:
 - * Air quality
 - * On-farm energy efficiency initiatives under EQIP
 - * The National Soil Health Initiative
- * The Conservation Stewardship Program is an existing program that is increasing and improving the ability to track and report the outcomes associated with program funding paid out to individual producers for contracted practices. This allows NRCS to show a link between investment and long-term program outcome
- * The Conservation Innovation Grant (CIG) program is one that is consistently focused on encouraging climate smart decision support and maintenance
- * The Regional Conservation Partnership Program (RCPP) ranks projects in a way that favors climate change mitigation and adaptation
- * The National Conservation Practice Standards are currently being updated and will reflect NRCS's commitment to reflecting the 10 building blocks within their existing authority and encourage implementation of practices that both safe guard producers against extreme weather events but also mitigate the impacts agriculture has on changing climate trends
- * One area, within existing authority, to look to for improvement is Conservation Training, Outreach, and Education efforts. Incorporating climate issues and increasing climate literacy would allow field staff to have increased levels of confidence when discussing and addressing questions about climate issues
- * Another area that could be better utilized is the Adaptive Management Workbook (AMW)
 - * By creating an AMW more specific to the Plains state, USDA could increase agency capacity to show the economic impact of adopting various management systems
- * **NRCS Soil Health Initiative (SHI)**
 - * This agency-wide initiative is focused on providing clients with technical assistance that is guided by up-to-date research and the best science available
 - * In the Southern Plains states, agency staff is utilizing peer-to-peer networks to communicate the effectiveness of soil health management systems (SHMS) and increase adoption rates by identifying "early adopters" and providing them with technical assistance geared toward helping minimize risk and increase likelihood of success while increasing the diversity of their ecosystems
 - * In Oklahoma, the state SHI is being done in conjunction with an RCPP
 - * Texas is working towards having soil health demonstration sites in each of the state's 5 zones and developing advisory groups that include every aspect of a whole farm system
 - * Kansas has developed a soil health guidance document which incorporates soil health concepts into their employee trainings, is facilitating peer-to-peer networks, increasing their cover crop termination education efforts, consistently modifying their training and outreach materials to reflect the most recent and highest quality science and research as it becomes available, and continues to stay connect to and supportive of the producer-lead groups across the state
 - * All states agree that providing and identifying existing opportunities to include climate education that shows links between soil health principles and the many ways these two

concepts are connected will go a long way to increasing the comfort level of agency staff and their ability to discuss and respond to climate related questions or begin to include climate related information in their outreach and education efforts

* **Rural Development**

- * Roughly 80% of Rural Development's programs have climate impacts, in one way or another
 - * Rural Energy for American Program (REAP) and the agency's rural water programs are the most easy to link to having an impact on climate, the "low hanging fruit"
 - * However, the rural community and small business loan programs present at great opportunity to increase energy efficiency standards and create cumulative emissions avoidance outcomes in quick, easy to measure way
 - * With half of the agency's \$750 million budget being spent on rural home loans and rural home construction loans, implementing some higher efficiency standards would have positive economic impact for both the home owners/loan recipients by lowering utility costs while creating an increased incentive to adopt higher energy efficiency standards through existing authority
 - * While the majority of Rural Development's programs are not competitive, the grant programs, which are usually at the state director's discretion, could place more of a priority on funding projects that consider climate change when developing their projects and proposals
- * Climate change discussions, at Rural Development, wouldn't focus as heavily as some other USDA agencies on the science and predictions but would be more about planning for and assessing the long-term viability of the projects funded by the agency and how the changing climate will impact existing projects as well as future projects
 - * The agency could assess their current policies to determine where changes could be made in an effort to better consider climate change impacts when assessing project funding
 - * Past droughts and flood events are already beginning to make rural communities consider how projects are structured/planned

* **Farm Service Agency (FSA)**

- * As far as existing programs, the Conservation Reserve Program (CRP) is the most versatile program within the agency that would have the ability to be adapted to address a wide array of natural resource concerns, including climate change
 - * However, the program faces some challenges in it's ability to be widely used as a climate change tool which include
 - * The continuous sign-up aspect of the program can make individuals nervous about the restrictive nature of the contracts
 - * Staff reductions and the over-taxed technical assistance providers place a strain on the agency's ability to implement the program to its full potential
 - * Acreage caps are causing the number of acres allowed to participate and be funded through the program to be lower- whether the reductions are based on market forces or other factors at the time each Farm Bill is written- and, based on past trends, its very unlikely the number of acres will increase in the next Farm Bill, even though sign-up demand is increasing
 - * Another hurdle faced by the agency, with many of their programs, is the perception that the programs are serving only private landowners and not viewed as funding something that benefits citizens on a broader level

- * FSA pointed out that, when it comes to their staff's comfort level in discussing climate change with their clients, to this point in time most information that their clients receive indicates that any policy related to climate change will have a negative impact on their bottom line so, moving forward, when employees are given information about climate change, tying it to a positive economic impact for the producer or as part of the process of achieving more financial stability in an increasingly unstable environment, that would go a long way to helping increase client's understanding and acceptance of the issue
- * Additionally, when modifying programs or adding new practices that are outside "what's always been done", demonstration is the best way to gain buy-in from their end users; showing them that practices can be incorporated successfully will help reduce the fear of financial losses or unnecessary risk

CLIMATE CHANGE WITHIN USDA

After completing the first three workshops it became very apparent that, in the Southern Plains states, there would be two distinct areas of focus to be done moving forward: identifying and improving how the subject of climate change was communicated to the customers/clients of USDA and, the more urgent issue, how, within the USDA agencies, can we better educate/train current and future USDA employees to have a basic understanding of the science of climate change and how it is already impacting the work they do on a daily basis. Once this became apparent, we sought out ways that we could incorporate examples of how other organizations/agencies have undertaken the task of employee education and training about the issue and how that can increase the effectiveness of external communications.

Luckily, we didn't have to look very far at all; in fact, we didn't even have to look outside the USDA family in the Southern Plains to find that someone was working on solving this puzzle already. As part of Texas AgriLife's Southwest Region Animal Ag & Climate Change Project, survey research had been collected and training developed to better prepare extension agents throughout the Southwestern states to discuss the topic of climate change and increase their ability to do so with confidence. Below is a summary of the project's findings to date and how they have been successful.

- * Texas AgriLife Extension Service set out to build the capacity of extension educators to discuss climate change by working with collaborators to organize and disseminate information through various means including interactive online websites and in-person training workshops
- * In order to ensure participation, state administrators were asked to select a number of participants for the project, as opposed to relying on individual volunteers. Not only did this guarantee sufficient participation, it also gave a diverse group of individuals the opportunity to be included in sharing their opinions, as opposed to just those that would tend to provide input based on their already established beliefs on the topic
- * The project utilized an open forum, interactive discussion approach to communicating information and gave the agents the opportunity to guide the process of how climate change information was incorporated into their training programs
 - * This was effective since locally-led organizations/agencies generally push back when they view something as a "top down" directive
 - * This also raised a question that was considered from that point forward in the project (and also applies to all USDA agencies dealing with climate-related issues)- was the goal to change people's minds about the "issue" of climate change or to encourage management/behavior changes
- * The research showed that to effectively communicate anything about climate change, you start by talking about the issues that are most important or have the most impact on your

- audience members and work climate change into that discussion; use a more natural, eased-in approach to raising the topic in conversation
- * One **very** important point that is important to remember when implementing the building blocks or asking USDA agency staff or partners to discuss climate change:
 - * **Always consider the individual**
 - * Where does the funding for that person’s position come from? Who controls their budget? When someone has to talk about climate change to a group of producers, will it be a room full of producers that they will see at their kids’ sporting event that weekend?
 - * USDA funding it is usually decided at the federal level but if there is state control of funding or, even more delicate, local control of funding and discussing climate change could be viewed as a “challenge” or in opposition to the cultural norm or politically popular position of a community or even state, that places a lot of pressure on that employee to comply with the norms or keep those responsible for their funding allocations happy then it will be a much more difficult, if not impossible, situation to change their comfort level.

COMMUNICATING CLIMATE CHANGE TO OTHERS

During this portion of the agenda, information about communicating the issue of climate change to agriculture producers and rural communities were shared. The presentations that were made included “Taking The Politics Out of Climate Change: An approach to discussing a hot topic and keeping your cool” from the Southern Plains Climate Hub, “The Basics of Effectively Communicating Climate Change in the Southern Plains” from the Assistant Director of the South Central Climate Science Center, and “Meeting Our Clients Where They Are: NRCS’s Successes in Kansas” from the Kansas State Resource Conservationist. After the conclusion of the these presentations, the group discussed what was shared, how other agencies could replicate what was considered “successful”, what could be improved, and how the Southern Plains Climate Hub could provide support to USDA agencies and their partners to increase the effectiveness of those communications.

* **What We Know is Working**

- * NRCS in Kansas has seen success in beginning to communicate about climate change to producers and communities by focusing on the following areas:
 - * Consistency in messaging
 - * Actively conducting “Social Marketing” by meeting the target audience where they are and being aware of producers’ identities has helped the agency and their state and local partners to understand producers’ culture and they consistently see that producers consider themselves
 - * Stewards
 - * Family-focused
 - * Business Owners
 - * Tend towards conservatism in their decision making and operations
 - * NRCS staff noticed the increased concern among producers about the current economic outlook in the state and, instead of backing away from trying to encourage producers to try something new by implementing various soil health management practices, they saw it as an opportunity to show how those practices, specifically cover crops, can offer another stream of revenue and further diversify and strengthen producers’ operation and make it more able to withstand hardships, whether economic or climate related

- * Using the agency's expertise and peer network, they focused on providing technical assistance to guide producers through the implementation process, easing concerns and answering questions, and offering whatever financial assistance was available through the agency to lessen the burden
- * Communicating about climate change is **all about trust** and climate change involves a lot of variables that can quickly cause distrust/disbelief
 - * Climate is long term and not easily observed
 - * It involves a lot of data, can be extremely confusing and the science community hasn't done a good job of explaining what all of that data means or how it works together to create the current situation
 - * It involves a lot of prediction and forecasting, neither of which are ever guaranteed and any deviation between predicted and actual outcomes can create doubt and skepticism
- * Our audiences want to be in the know but climate change communication requires we build relationships, we can't push our audience into belief or scare them into trusting us, and it will be a gradual change
 - * Public opinion ebbs and flows, it takes much longer to build trust than it does to break it
- * Focus, primarily, on discussing weather extremes- how our audiences prepare for those extremes, how they could be impacted by extremes, etc. because those extreme are more personally identifiable for the audience and are more easily demonstrated and recalled in recent memory so they can be linked to the bigger, more complex impacts of climate change
- * **What could be improved?**
 - * Since the agency incorporates a multitude of resource concerns/issues into their planning and program standards, climate change has been identified as a resource concern to be incorporated into the standards
 - * With the increased focus on soil health, the group agreed that starting with that as the primary point of discussion and tying various aspects of climate change adaptation and mitigation into the communication tools already being used by NRCS would be the most effective way to incorporate the topic into future communications

MAKING THE HUB WORK FOR USDA

- * USDA staff members from all states indicated that having the Hub take the most current research, whether from universities, USDA-ARS, other USDA researchers, or any other pertinent groups, and translate that research into easily understood terms for consumption by the general public/agency clients would be extremely helpful by reducing the burden on already over-extended technical staff and, thereby, increasing the likelihood of those staff members sharing climate-related information with the agriculture producers and members of rural communities that they work with on a regular basis
- * Assist agencies to develop a solid understanding of state and regional landscapes as they are now and how much can be **realistically** done within a 3 to 5 year span of time so, as agency staff is engaged in long term planning, they can effectively begin to incorporate the various building blocks in ways that are both within reach yet challenging enough to show real strides being made within the agency and by their clients
- * Either find existing or help establish and fund new research projects to collect sociological and/or psychological data to determine how to most effectively prompt behavior modification that will lead

to adoption of management changes among agriculture producers; in other words, what prompts producers to make changes and how can NRCS/USDA adapt their current training and planning standards to increase the number of acres being managed in ways that will both help producers adapt to the impacts of and mitigate the causes of climate change

- * Communicate to USDA agencies that the Hubs understand change takes time and establishing realistic expectations is important to achieve program goals and continue to offer support
- * The Hub should put processes in place so that they are reaching out to USDA agencies and offering support/help as opposed to waiting for the agencies to reach out to the Hubs
- * When information is shared, format or package the information in a way that states can use the resources quickly and easily incorporate it into training/education materials
- * Develop a document for each agency that explains how climate change interacts with the USDA programs and topics employees encounter and work with everyday and link it to local efforts by translating or connecting local priorities to the goals outlined in the 10 building blocks
- * Continue to communicate, on a regular and personal level, how the programs/practices being implemented by USDA employees is helping achieve the goals outlined by the Secretary- link state and local actions directly to positive outcomes being quantified by USDA leadership
- * Assist agencies in developing, collecting, and processing ongoing feedback collected from the public and the agency's customers
- * Work to streamline and improve the ability of USDA agency tools to work together and cut down on recreating the same tool with different name from agency to agency
- * Agency staff would benefit from the Hub collecting the information and data on how the practices implemented by USDA programs result in beneficial outcomes
 - * This would allow agency staff to benefit from having more of a "whole picture" view of what USDA as a whole is doing as opposed to their individual areas of work
- * Expand the Hubs' outreach to Rural Development
 - * If the Hubs were more involved with RD other areas of the country they could possibly help track how Rural Development's investment has an impact on GHG emission reductions and quantify the benefit that RD's programs have on USDA's overall commitment to improving the climate across the country
 - * Hub staff could offer assistance with outreach about opportunities and offer to assist entities going through the process of apply for REAP grants and help increase application completion rate
 - * Help identify ways to increase the opportunities for RD programs resulting in GHG emission reduction or avoidance to be reported and included in Building Block goals
- * Have the Hubs dedicate time to research secondary and proximal fiscal benefits of USDA programs and which of those programs have the most effective and long-term impact, dollar-for-dollar
- * Serve as a conduit for sharing research and science being conducted by USDA/partner organizations and communicating the application of the research already done as it applies to various audiences
- * Develop a platform for more regionalized information sharing
- * Identify how agroforestry research and programs can more effectively benefit the Southern Plains
- * Encourage interagency communication and cooperation within USDA
- * Identify and bridge communication gaps between upper level USDA staff and state/local level staff