Science Societies

Supporting agricultural resiliency through evidence-based policy

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Dr. Sylvie Brouder (former president of ASA) testifies alongside Dr. Ali Fares (ASA–SSSA Member) at a U.S. House Agriculture Committee hearing in June.

As climate change alters weather patterns across the United States, causing increasingly unpredictable temperatures and rainfall, producers need strategies to improve resiliency on their farms and ranches. A congressional hearing hosted by the House Agriculture Committee in June aimed to address this challenge. The hearing focused on how policymakers can use climate research findings and data to create policies and programs to support agricultural resiliency. During the hearing, Dr. Sylvie Brouder, former ASA president, testified on behalf of agronomy, crop science, and soil science researchers.

In her testimony, Dr. Brouder emphasized challenges and opportunities associated with agricultural data. “In 2019, I led an analysis of the limitations to agricultural decision-

making posed by a pervasive lack of accessibility and sharing of research data; for agriculture, the scope of data-related opportunities and challenges is hard to overstate," she wrote. To combat climate change and provide producers with robust, effective solutions, the research community must work alongside industry groups and farmers to curate open and interoperable datasets.

Equipping NextGen Specialists with Data Analytical Skills

Brouder also highlighted the need to better prepare the next generation of extension specialists and technical service providers to deal with complex data. All students leaving agricultural programs should be equipped with basic data analytical skills so that they understand how to interpret results and identify issues. "We urgently need new education materials that accurately characterize on-farm benefits and a large, new cohort of NextGen extension specialists and service providers skilled in communicating the need for, potential, and uncertainties of climate-smart practices. NIFA currently has open calls related to capacity development, but the current investment level is too low to achieve a sustained, increased capacity in programming," said Brouder in her opening statement.

During the hearing, several committee members on both sides of the aisle directed questions to Dr. Brouder. Representative Feenstra (R-IA) asked how we can more effectively 'connect the dots' from research to producers, particularly as the next farm bill is considered. Brouder reiterated the need for extension specialists and technical services providers who can serve as data translators—collecting and interpreting on-farm data and sharing results from scientific studies. Further, she noted that "all research can't be done by researchers," highlighting the need for collaborative public–private data collection and research synthesis in response to a question from Rep. Axne (D-IA). She also cited "synthesis research to understand the nuances of

[agronomic] recommendations" as the most exciting research to pursue.

Dr. Brouder also had the opportunity to expand on basic scientific concepts in agronomy and soil science. Representative Kuster (D-NH) asked for clarification about the interactions between soil health practices, crop nutrient demands, and the impacts of changing climate conditions. In response, Brouder discussed the nuanced correlations among crop yields, nutrient applications, and soil carbon stocks. In response to a question from Rep. LaMalfa (R-CA), Brouder discussed carbon cycle dynamics and the impact of tillage. "Let me be very clear, there is a purpose for all practices farmers have adopted, but all of them have trade-offs," she emphasized.

Support, Funding Needed to Create Infrastructure

Creating infrastructure to support data-driven recommendations and policies in agriculture will require a multi-faceted approach, but it was clear in the hearing that robust support from USDA will be critical. One way to dedicate resources to this challenge is through fully funding the Agricultural Advanced Research and Development Authority (AgARDA), a program created in the 2018 farm bill. "AgARDA, under the [USDA] Office of the Chief Scientist, can bring together stakeholders to address big issues. We need data repositories to talk to one another," Brouder said in response to a question from Rep. Baird (R-IN). Many of the other panelists supported this perspective and also highlighted the need to effectively fund and modernize the Cooperative Extension System.

Throughout the dialogue, Dr. Ali Fares, a panelist representing 1890 land grant institutions (historically Black colleges and universities), reiterated the value of working alongside stakeholders to answer research questions. Dr. Fares shared stories working with underserved, minority farmers in Texas and highlighted the need for infrastructure and access to technology for all researchers. He also commented on lessons that can

be learned and shared through international collaborations.

Testifying at a congressional hearing is an invaluable opportunity for members of ASA, CSSA, and SSSA to share their perspectives on pressing societal challenges and highlight relevant scientific findings. “I hope this testimony translates to new opportunities for us to offer the insight and expertise of our members to such big conversations,” said Jim Cudahy, ASA, CSSA, and SSSA CEO. Cudahy attended the hearing with Science Policy Office staff and learned firsthand that the expertise of our members is highly valued by congressional staff.

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