



Exploring integrated solutions from the land for addressing food and energy production, economic development, biological diversity and climate change challenges.



For Immediate Release

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Solutions from the Land Issues Report on Challenges Posed by Changing Climatic Conditions in Missouri

A [report](#) released today by [Solutions from the Land](#) (SfL) summarizes a facilitated dialogue with a collaboration of producer-leaders from Missouri's agriculture and forestry sectors, along with business, academic, research and government partners, on the challenges that changing climatic conditions and extreme weather events are and will have on agriculture and forestry production in the state.

Through this dialogue, Missouri agriculture and forestry leaders looked into the future, examined what science is telling them is coming, and explored opportunities to improve resiliency and ensure the economic viability of the state's agricultural and forestry sectors for decades to come.

[The Missouri Smart Agriculture Work Group](#) was asked to assess the state's agricultural and forestry sectors' preparedness to meet the changes and challenges that climate scientists are forecasting. The Work Group also discussed the tools, practices, technologies or programs that producers need to adapt to the changing conditions, manage and respond to risks and improve the resiliency of their operation.

The challenges facing Missouri agriculture and forestry producers include commodity prices, input costs, global market structures, changing consumer preferences and regulatory uncertainty, among others. Many of these challenges will be exacerbated by the impacts of extreme weather events and changing climatic conditions. The Work Group provided a forum for discussing and evaluating adaptation measures including, soil conservation systems, risk management tools, and infrastructure modifications, among others.

One important adaptive management strategy that the Work Group identified was the use of conservation practices by Missouri farmers to boost production, enhance soil carbon content and reduce soil loss. Informed by a [report](#) from project partner Climate Central, the group validated the role conservation practices play in helping farmers manage the more-intense weather extremes that occur more frequently with our changing climate. These climate-smart farming methods also aid in carbon sequestration, removing some of the excess carbon dioxide from the atmosphere and trapping the soil-enriching carbon in the ground.

Missouri was an ideal state to explore pathways for improving resiliency because of the various combinations of climate, terrain and soil in Missouri have made possible several major types of farming. According to the latest National Agricultural Statistics Service data, the state is home to 97,300 farms and ranches covering some 64 percent of the state's total land acreage and supporting many of the state's top agricultural commodities, including soybeans, corn, cotton, cattle and calves, hay, hogs and turkeys. Agriculture is a \$9-billion sector, while some 14 million acres of forest land (85 percent of which is owned privately) contributes about \$3 billion each year to Missouri's economy.

However, over the past several decades, a noticeable shift in climatic conditions and trends has created new challenges for managing Missouri's working lands. Missouri's State Climatologist has reported above normal temperatures in 15 out of the past 20 years, continuing a warming trend first noted in the mid-80s. Summer and fall nighttime temperature averages have been notably higher over the past few decades.

Over the past 20 years, the spring frost dates are occurring earlier and autumn frost dates are occurring later; above-normal precipitation, including "heavy" and "extreme" rainfall events, has been trending above normal since the early 1980s; snowfalls have been declining; and the state is experiencing more abrupt changes between extended dry and wet patterns.

"Missouri has a great agricultural tradition," said Ethan Miller, a row crop and livestock producer from Centralia and a member of the Missouri Smart Agriculture Work Group. "While agriculture and forestry may have challenges ahead, it also offers nearly half the solution opportunities that society is asking for. This is the untold story and our Work Group will be a platform for ongoing leadership and discussions on the food, feed, fiber, energy and ecosystems services that can be delivered from the land."

The work in Missouri is part of a larger dialogue that SfL is conducting on [climate smart agriculture](#) strategies and practices across the country. "The nation's agriculture and forestry sectors can be valued and someday compensated for delivering the full range of products and services that a growing consumer base – and society – expects," said Shea. "In addition to safe, affordable and abundant food, feed and fiber, the sectors can offer clean energy and ecosystem services such as water filtration, flood control, enhanced biodiversity and carbon sequestration."

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Solutions from the Land (SfL) is a non-profit entity focused on land-based solutions to global challenges. SfL identifies and facilitates the implementation of integrated policies, practices and projects at a landscape scale that will result in land being sustainably managed to produce food, feed, fiber and energy, while enhancing biodiversity, protecting and improving critical environmental resources and delivering high value solutions to combat climate change. For more on ***Solutions from the Land***, click [HERE](#).