ARS National Research Program for Agricultural System Competitiveness and Sustainability

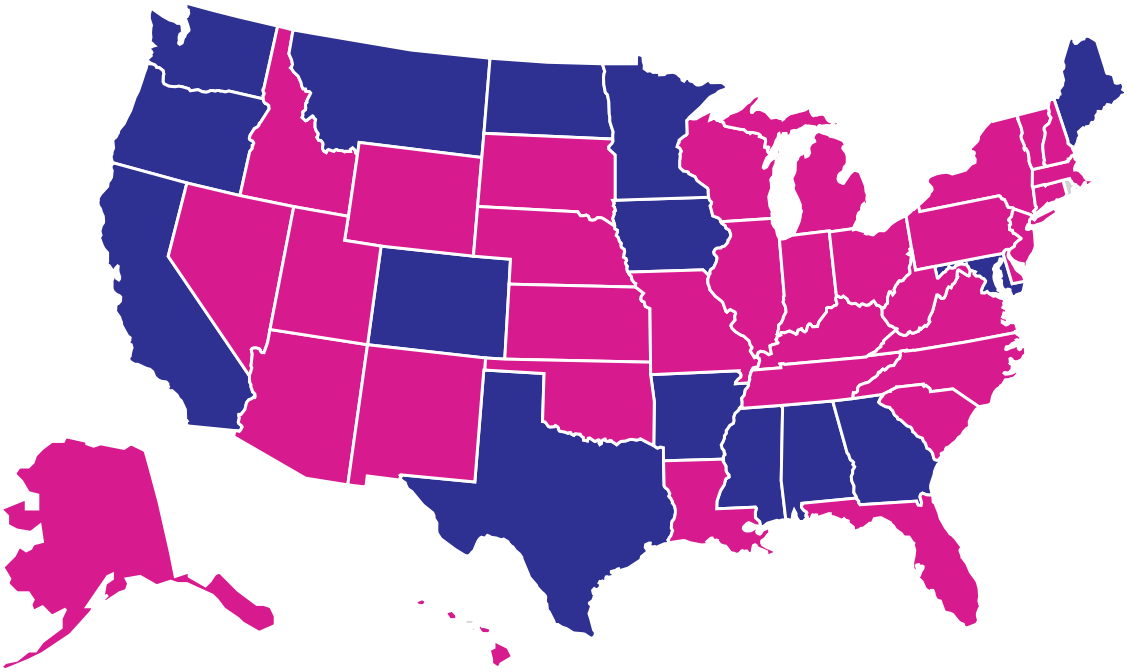
The value of U.S. crop output in 2002 was 2.6 times higher than that in 1948, while the total amounts of production inputs required to achieve this output have declined. This means farmers are producing more agricultural products today with fewer resources than at any other time.

But the profitability of many farms across the country is declining because of escalating costs of energy, fertilizers, and other purchased inputs. New technology and strategies based on an understanding of underlying agroecological principles are needed to increase whole-farm profitability and competitiveness in the world market.

The 21 projects in ARS National Program No. 216, Agricultural System Competitiveness and Sustainability use interdisciplinary research approaches to develop new technologies and innovative strategies to help producers better compete in the marketplace while being good stewards of natural resources. Because climate, soils, kinds of crops grown, and other production conditions differ greatly across the country, diverse solutions are needed to help producers achieve their individual production goals. This research provides a range of options that producers can choose from that are best for their specific situations, regardless of farm size and location.

A unique feature of these projects is the interdisciplinary approach to problem solving. The challenges producers face regarding productivity, profitability, and natural-resource stewardship are not simple—and neither are the solutions. To gain a deeper understanding of the factors that significantly affect the ways farms function, research projects often require collaborations among biological and physical scientists, economists, engineers, and specialists in data management. Research teams include not only ARS scientists, but also those from other federal and state agencies, universities, and industry.

Customers and stakeholders are also often involved in many aspects of this research. They help identify the kinds of problems that the research projects should focus on and have ongoing involvement in the conduct of the research and interpretation of the findings. Many of the research projects are conducted on farms and are run for more than 5 years so that the findings are applicable to real-life conditions. Close involvement with customers helps to ensure that the research is appropriately targeted toward problems whose solutions will produce the greatest benefit.

This is one of six ARS national programs that are a part of a nationwide network of 70 research locations in Natural Resources and Sustainable Agricultural Systems. All are dedicated to helping farms and ranches become more profitable while enhancing environmental goods and services derived from agricultural lands.

= States Where ARS Does Research in Agricultural System Competitiveness and Sustainability