KANSAS STATE UNIVERSITY

Conserving the Ogallala Aquifer

Problem/Issue Statement

Groundwater from the Ogallala Aquifer is used extensively to produce food and drive the economy of western Kansas. This region leads Kansas in crop production and comprises the core of the U.S. beef cattle feeding industry. The top eight Kansas agricultural counties are located over the Ogallala Aquifer and represent one-third of Kansas' total value of agricultural production. However, water is increasingly in short supply in the Ogallala region of western Kansas. Kansas State University research in 2013 estimated that, in the Kansas portion of the aquifer, 30% of the water was already depleted; by 2060, 70% would be depleted; and, by 2100, almost all would be completely depleted. Changes in climatic conditions, including the possibility of more extended and severe drought conditions, will require even more climate-adaptive practices and technology. Conserving and extending the useful life of the Ogallala Aquifer, the lifeblood of western Kansas, will require significant investment in research and technology development efforts led by K-State, combined with rapid technology transfer to the agricultural industry.

Request Description

Kansas seeks long-term solutions to manage a depleting Ogallala Aquifer and to develop agricultural systems, engineering, and policy solutions that will sustain the aquifer for current and future generations. An addition investment of $810,000 to support four major areas is essential: 1) identifing and developing new drought resistant crops and varieties/germplasm; 2) new irrigation technologies; 3) extension programs to enhance adoption of new technologies; and 4) new education curriculum and delivery to university students and the general public on water issues.

Specifically, the additional resources will be used to expand both the Master Irrigator and Testing Ag Performance Solutions (TAPS) programs into Kansas. Both of these programs provide education and outreach directly with producers and industry partners to accelerate the adoption of technology and alternative crops. The funding request will also provide support for developing and implementing more drought-tolerant crop varieties and hybrids.

These additional investments directly support K-State's plan for Economic prosperity with innovations such as development of water-conserving crop solutions — such as cotton and sorghum — that stimulate value-added opportunities critical to economic development in Kansas. Advancements in precision agriculture and digital agriculture not only reduce water demands, but fuel growth of existing and attraction of new Kansas businesses and family sustaining jobs.

Request Goals and Expected Outcomes

Three goals and expected outcomes drive K-State's work in conserving the Ogallala Aquifer, 1) Develop more drought-tolerant crop varieties, efficient irrigation technologies, and water and nutrient management. 2) Evaluate alternative food and feed grains, oil seeds, and energy crops for drought- and heat-tolerance, adaptation to no-tillage or strip-tillage production systems, and utility as feed for livestock or feedstock for liquid fuel production. 3) Utilize the latest technologies and computational forecasting tools to quantify and understand interactions and feedbacks between available water resources and societal needs and values.

Appropriations Subcommittee

Agriculture, Rural Development, Food and Drug Administration, and Related Agencies

Request Type

Funding Request ☒ Bill Language Request ☐