USDA Regional Climate Hubs: Southern Plains Regional Vulnerability Assessment Summary

Climate Vulnerabilities in the Southern Plains

Regional Description:

The value of agricultural production in the Southern Plains exceeded $59 bil (2012 Agricultural Census) with livestock accounting for 58% of total agricultural sales. Crop and livestock commodities exceeding $1 bil include wheat, corn, horticultural crops, cotton, hay and forages, sorghum, soybean, beef cattle, poultry and eggs, dairy, and swine. In particular, the region contributes significantly to the nation's wheat and beef production. Winter wheat is the principal rainfed annual crop, much of it dual-use as cool-season forage in addition to grain production. Cattle are raised on pasture and rangelands across the region. Corn is the primary irrigated crop in the Ogallala Aquifer area. Horticultural crops and cotton are increasingly important in the southern portion of the region, while corn and soybean are more important in the northern part of the region. In addition, the Southern Plains is home to a large percentage of the nation's grasslands which provide additional benefits to the region, and has extensive forests in the southeast.

Climate Related Hazards and Vulnerabilities:

- Longer, warmer growing seasons with increased vulnerability to late season frost.
- Increased extreme weather events (e.g., downpours and droughts, heatwaves and cold snaps) and continued violent storm events (ice, hail, wind, tornadic activity).
- Greater frequency, duration, and intensity of drought reducing production and economic viability, increasing reliance on irrigation where applicable, and increasing wildfire conditions.
- Dropping groundwater aquifer levels reducing irrigation water, and increasing costs and energy use.
- Increasing pest, disease, and weed pressure on crops as well as increasing heat stress on plants and livestock.
- Vegetation shifts may impact threatened, endangered, and other species of concern such as pollinators.

Adaptation and Mitigation Strategies:

- Increase soil health through conversion to no-till production, incorporation of cover crops and enhanced soil and residue management for both adaptation and mitigation by reducing erosion and fuel usage, increasing soil moisture, reducing emissions and sequestering carbon in the soil.
- Implement adaptive grazing management and improve health of pasture and grazing lands soils. Develop heat, frost, and drought resistant cultivars and heat tolerant livestock.
- Increase irrigation efficiency (i.e., more crop per drop) and utilize new technology for subsurface irrigation for both adaptation and mitigation.
- Improve energy and water efficiency of production agriculture systems and rural communities.

Regional Priorities:

- Education and outreach, including engaging with partners on soil health demonstration plots and producer field days for crop and livestock production including pasture management.
- Facilitation of research on benefits of adaption and mitigation strategies, barriers to adoption of these strategies, and the methods necessary to encourage the adoption of these strategies.
- Highlight success stories in adaptation and mitigation by farmers, ranchers, and rural communities.

To learn more about the USDA Climate Hubs visit: www.usda.gov/climatehubs
To read the full Vulnerability Assessment visit: http://go.usa.gov/3MJp4