USDA Regional Climate Hubs: Midwest Regional Vulnerability Assessment Summary

Climate Vulnerabilities in the Midwest

Regional Description:

Agriculture is the dominant landscape enterprise across the Midwest and represents one of the most extensive and intensive agricultural areas in the world. Although this area is referred to as the Corn Belt, corn and soybean production occurs on 75 percent of the arable land with the remainder used to produce a wide variety of crops along with a very significant forest sector. Livestock production of meat, eggs, and milk contribute to the vitality of Midwest agriculture. Market value of agricultural products sold exceeds $80 billion dollars with forestry near $60 billion dollars. Climate coupled with the soil resource are among the most valuable assets of the Midwest agriculture and forest systems.

Climate Related Hazards and Vulnerabilities:

- **Increasing spring precipitation** reduces the number of workable field days in the spring and disrupts planting and crop establishment operations
- **Increased intensity of rainfall events** leads to increased soil erosion and even more in fields with inadequate conservation practices to protect the soil surface
- **Higher temperatures coupled with high humidity** increase the stress on livestock
- **Increased variability in temperature and precipitation** negatively affect the efficiency of agricultural enterprises
- **Warmer winter temperatures in the forest areas** will affect the water use by forests and when coupled with more heavy precipitation events lead to more flooding and disruption of forest operations

Adaptation and Mitigation Strategies:

- Increase soil conservation practices to protect against heavy rainfall events
- Adjust planting times to avoid the potential for heat and water stress
- Provide shelter for animals to protect against high temperatures and cooling against heat stress
- Increase tree cover on landscape for carbon sequestration
- Implement improved nitrogen and water management practices to reduce nitrous oxide emissions
- Improve manure management systems to reduce methane and carbon dioxide losses

Regional Priorities:

- Focus outreach on available climate-based tools for corn and soybean and extend to specialty crops and livestock
- Implement adaptation and mitigation workshops in cooperation with NRCS and FSA for agriculture and forest land managers
- Synthesize available research on adaptation practices to provide guidance for producers on effective soil and crop management systems to reduce variation in production and enhance soil health

To learn more about the USDA Climate Hubs visit: www.usda.gov/climatehubs
To read the full Vulnerability Assessment visit: http://go.usa.gov/3eE9V