Maryland Climate-Smart Agriculture Project

2023 Rural Summit

What is the Maryland Climate-Smart Agriculture Project?

- A **farmer-centered** project looking at what agriculture needs to be adaptable and profitable for the future, with an eye on Chesapeake Bay health.

- Two prongs:
  - Research Team is evaluating potential impacts on ag, including climatic models, economics, legal, environmental, social justice and agricultural practices.
  - Outreach with farmers and service providers about their observations, questions, ideas on challenges and opportunities of climate change, and their needs to overcome perceived barriers.

What Are The Project Outcomes?

- Comprehensive data on the projected impacts of climate change on Maryland farms and farmers

- Access to science-based knowledge of tools, ideas and methods to use on the farm

- Discussions about how the state can help farmers with adaptation and mitigation

We want to create an ongoing partnership to ensure that Maryland farms remain in business alongside a healthy Chesapeake Bay, bringing together:

- Farmers
- Researchers
- Service Providers
- Policymakers

What Producers Are Telling Us

- Farmers are already experiencing impacts on their operations

- Drought followed by extensive rainy periods and varying storm intensities

- Impact from increases in major weather events like hurricanes

- Pest and wildlife pressure

- Investment in costly equipment and infrastructure to face a changing climate

- General loss of agricultural land (saltwater intrusion, development, etc.)

What Researchers Are Telling Us So Far

- Mid-Atlantic sea level rise is twice the global rate.

- Extreme weather events have increased since 2000.

- Possible to sequester up to 5.7 million metric tons of soil carbon equivalent in Maryland agricultural soils alone between 2021-2030

  - Tied with correct agronomic practices

  - May be reduced by climate change

How Will Climate Change Impact Animal Ag?

- **Dairy and livestock**

  - *Heat stress decreases meat and milk production (measured by seasonal fat and protein levels)*

- **Poultry**

  - *Avian flu a more likely occurrence due to changing migratory patterns for wild birds due to climate change*

  - *Housing will be more insulated with higher fan capacity*

- Summer fuel costs likely offset by milder winters

What Researchers Will Look At Next

Important plant crops and pests

- List of Maryland's critical plant crops

- List of pathogens, insects and weeds

    1. *Those currently impacting our crops*

    2. *Pests in our southern regions that may expand northwards with changing climate*

- Evaluating the impact of climate change on crop production due to weather as well as changing pest life cycles and distribution.

What Researchers Will Look At Next

Climate projections and simulations

- Mining historical data

- Creating simulations and projections for the next 30-40 years

- Fine-resolution modeling critical due to physio-geographic nature of Maryland

Impacts on litigation on Maryland ag/protections

Impacts on economics of production/markets

<u>Research finalized in summer 2024</u>

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To stay updated on the Maryland Climate-Smart Agriculture Project, visit:
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