Integrating US Midwest Field Research Networks for Climate Adaptation

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Climate Trends: Temperature

Global surface temperature deviation 2005 - 2015
Annual J-D 2005-2015  L-OTI (°C) Anomaly vs 1951-1980  0.67

Note: Gray areas signify missing data.
Note: Ocean data are not used over land nor within 100km of a reporting land station.

http://data.giss.nasa.gov/gistemp/maps/

Climatic Research Unit –
University of East Anglia
Climate Trends: Precipitation

Precipitation in the Contiguous 48 States, 1901–2015


For more information, visit U.S. EPA's "Climate Change Indicators in the United States" at www.epa.gov/climate-indicators.

http://www.ncdc.noaa.gov/
Estimated impact of climate on yield trends: 1980-2008

Lobell et al., 2011
Global production increases for maize, wheat and rice from closing yield gaps to 50%, 75%, 90% and 100% of attainable yields.

Benefits of an integrated network:
Climate adaptation and mitigation

Co-benefits

Innovation
Components:

Long-term

Geographically - specific

Comprehensive

Scalable
Basic understanding: Lab/Greenhouse/microplot

Pilot scale: Early conceptualization

Broad scale: On-farm/industry trial
Starting points – Consortium of Community Colleges

Basic understanding: Lab/Greenhouse/microplot

Pilot scale: Early conceptualization

Broad scale: On-farm/industry trial
Starting points – USDA GRACEnet

- **Basic understanding:** Lab/Greenhouse/microplot
- **Pilot scale:** Early conceptualization
- **Broad scale:** On-farm/industry trial
Starting points – USDA Climate Hubs

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Farmers/associations

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Industry
Starting points – Integration and Innovation

Farmers/associations

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Pilot scale:
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Industry
Starting points – Integration and Innovation

Farmers/associations

Conservation organizations

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Industry
Starting points – Integration and Innovation

**Farmers/associations**

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**Conservation organizations**

**Industry**
Starting points – Integration and Innovation

Farmers/associations

Conservation organizations

Industry

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Farmers/associations

Conservation organizations

Universities/Federal

Industry

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Strategies for consistency:

- Engagement and buy-in
- Shared strategies and objectives
- Institutional education and knowledge
- Shared resources for data
Outreach, education and feedback
Additional incentives for action