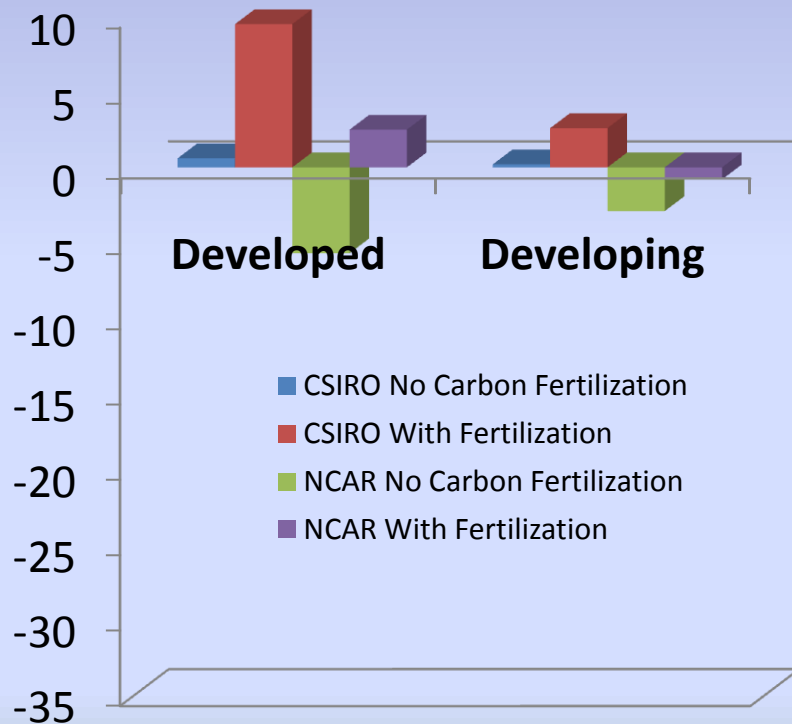


Agriculture and Climate Change Impacts and Adaptation

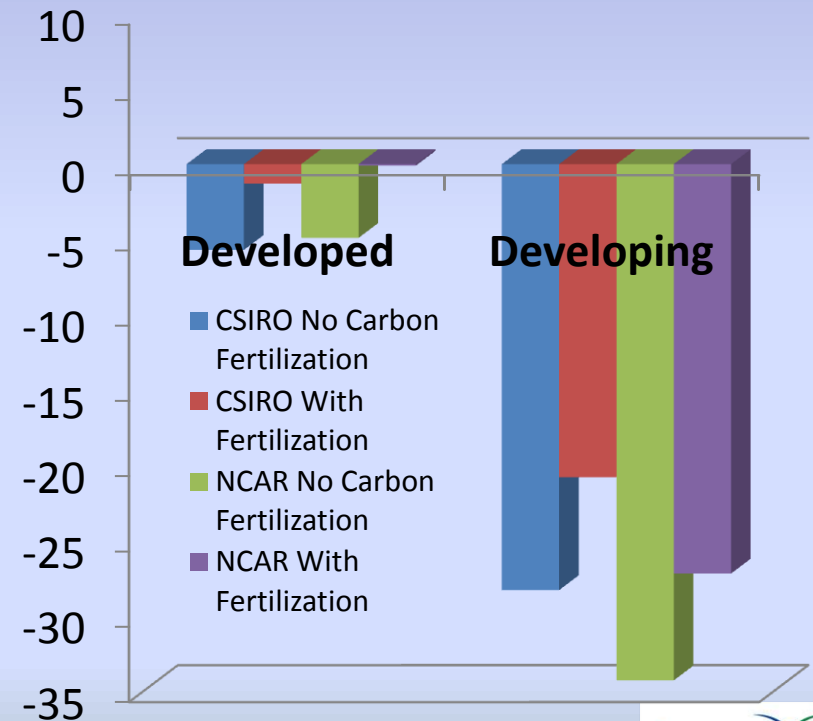
**Neil Conklin, Farm Foundation
Prepared for
Paul H. Nitze School of Advanced International
Studies Corporate Breakfast Series
Climate Change & the Future of Global Agriculture
Thursday, November 18th**

The Yield Effects of Climate Change

Percent Change in Rainfed Corn Yield by 2050

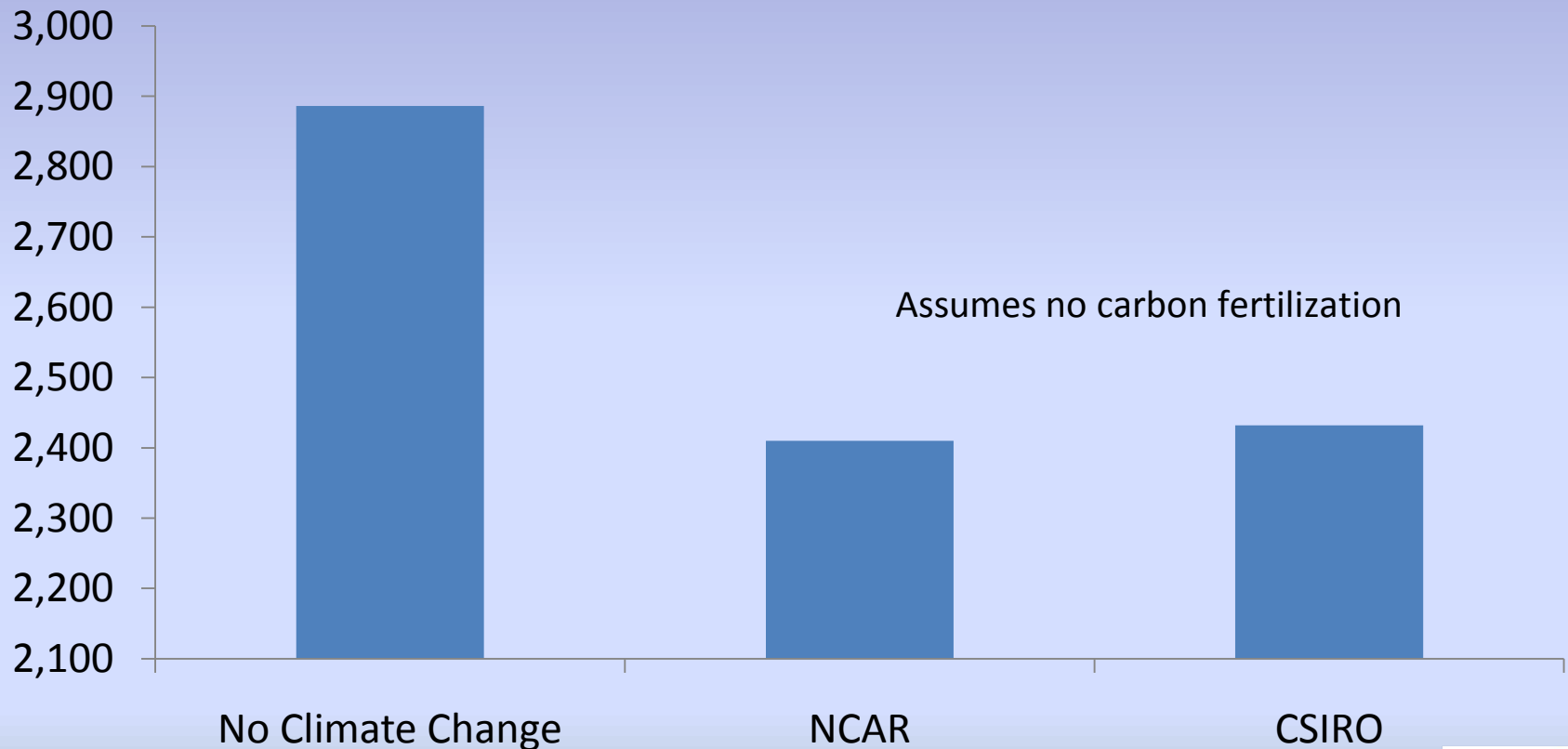


Percent Change in Irrigated Wheat Yield by 2050



Bottom Line for Developing Countries

kcal/person/day



The United States

- Yield effects generally expected to be positive but not large
- Shifts in land use patterns
 - Corn and soybeans continue to shift north
 - Marginal areas with low rainfall may shift out of crops to pasture or completely out of production
- Potential declines in irrigated acreage, especially in California
- Increased variability and risk may be biggest problem

Adaptation Issues

- Impacts are highly uncertain
 - Climate projections are uncertain and lack spatial resolution
 - In agriculture as in politics “everything is local”
- But we can conclude with some certainty
 - Impacts greatest for tropical countries and many of them are developing
 - Farmers have adapted to changing climate in the past and will in the future
 - Investments in R&D critical
 - Including capacity for local adaptive research
 - Policies should focus on providing both farmers and consumers (especially in developing countries) to manage greater risk

Additional Resources

- Reilly, J., et al. 2001. *Agriculture: The Potential Consequences of Climate Variability and Change for the United States*
 - <http://www.usgcrp.gov/usgcrp/Library/nationalassessment/Agriculture.pdf>
- IFPRI Food Policy Report, Climate Change Impact on Agriculture and Cost of Adaptation
 - <http://www.ifpri.org/publication/climate-change-impact-agriculture-and-costs-adaptation>
- Choices Magazine
 - <http://www.choicesmagazine.org/magazine/article.php?article=148>
 - <http://www.choicesmagazine.org/2008-1/theme/2008-1-03.htm>
- U.S. Global Research Program report “Synthesis and Assessment Product 4.3 (SAP 4.3): The Effects of Climate Change on Agriculture”
 - http://www.usda.gov/oce/climate_change/files/SAP4_3/Agriculture.pdf