

# From Global Futures to Strategic Foresight for Ex-Ante Research Assessment

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## Why the Global Futures Project?

- If an investor provides an additional \$x million to the CGIAR, how should it be spent to provide the greatest return on investment?
  - Financial ROI
  - Reduction in poverty
  - Improvements in sustainability
- The Global Futures project develops methods, tools, and a consistent system to help the CGIAR answer this question

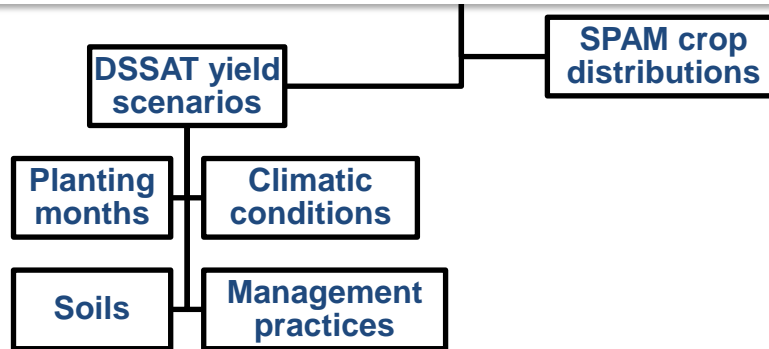


# How to evaluate potential technological improvements: The ‘virtual crop’ method

1. Ask the experts for details on what they think can accomplish technically
2. Convert these responses into crop model coefficients
3. Use crop modeling software to ‘grow’ the virtual variety everywhere and evaluate performance relative to existing varieties



# Integrate biophysical productivity effects and socioeconomic modeling



Virtual crop activities

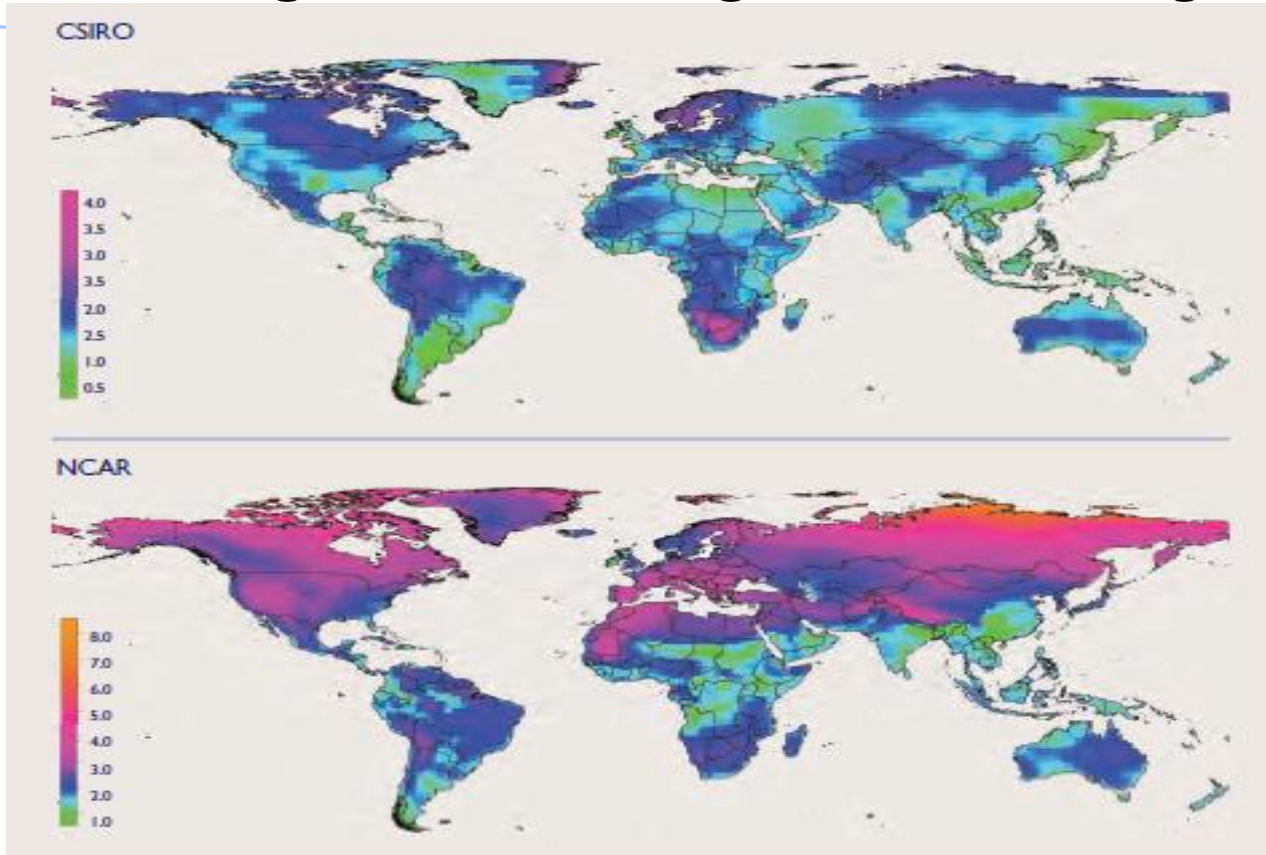


# WHY SCENARIOS?

The future is an uncertain place



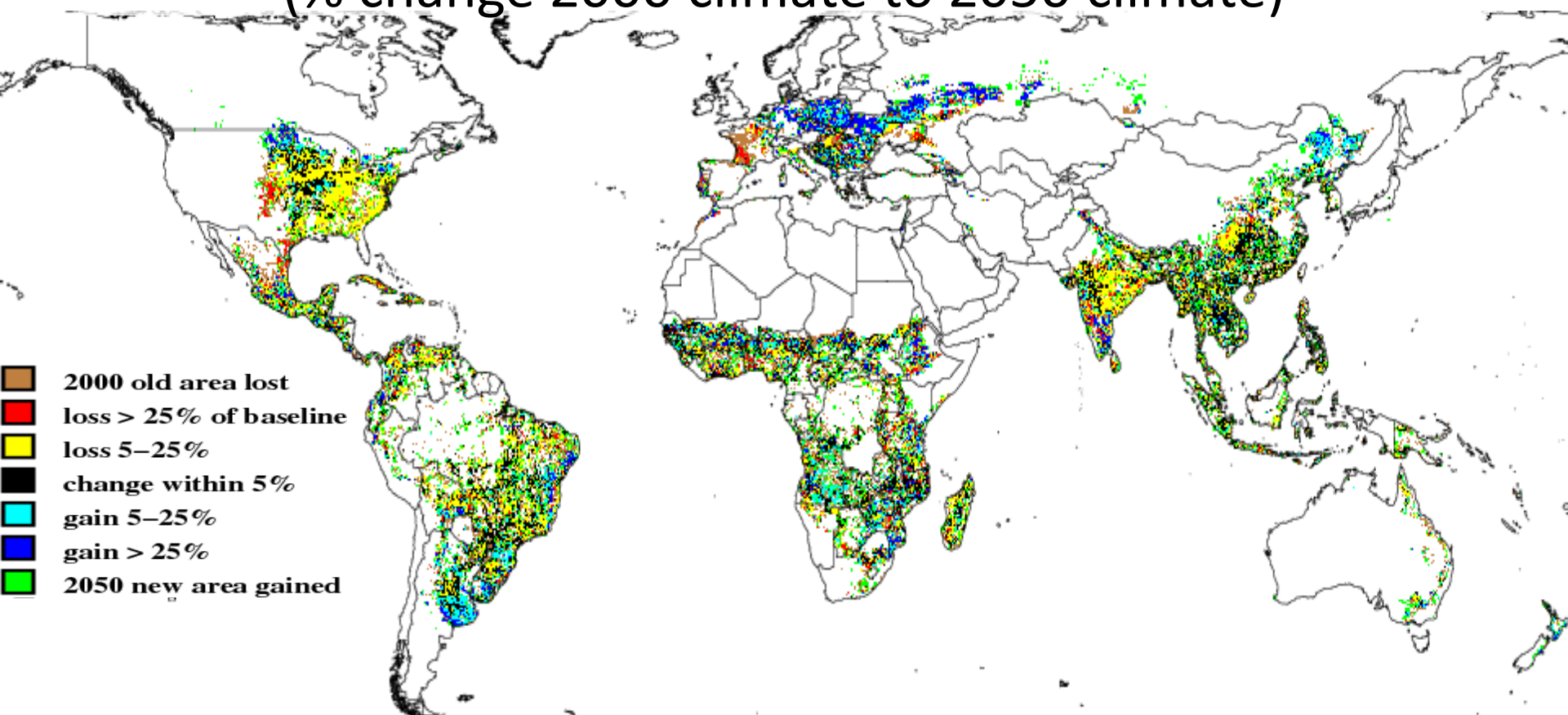
# Challenges in Modeling Climate Change



**Average temperature change, 2010-2050, 2 modeling groups, scenario A2**

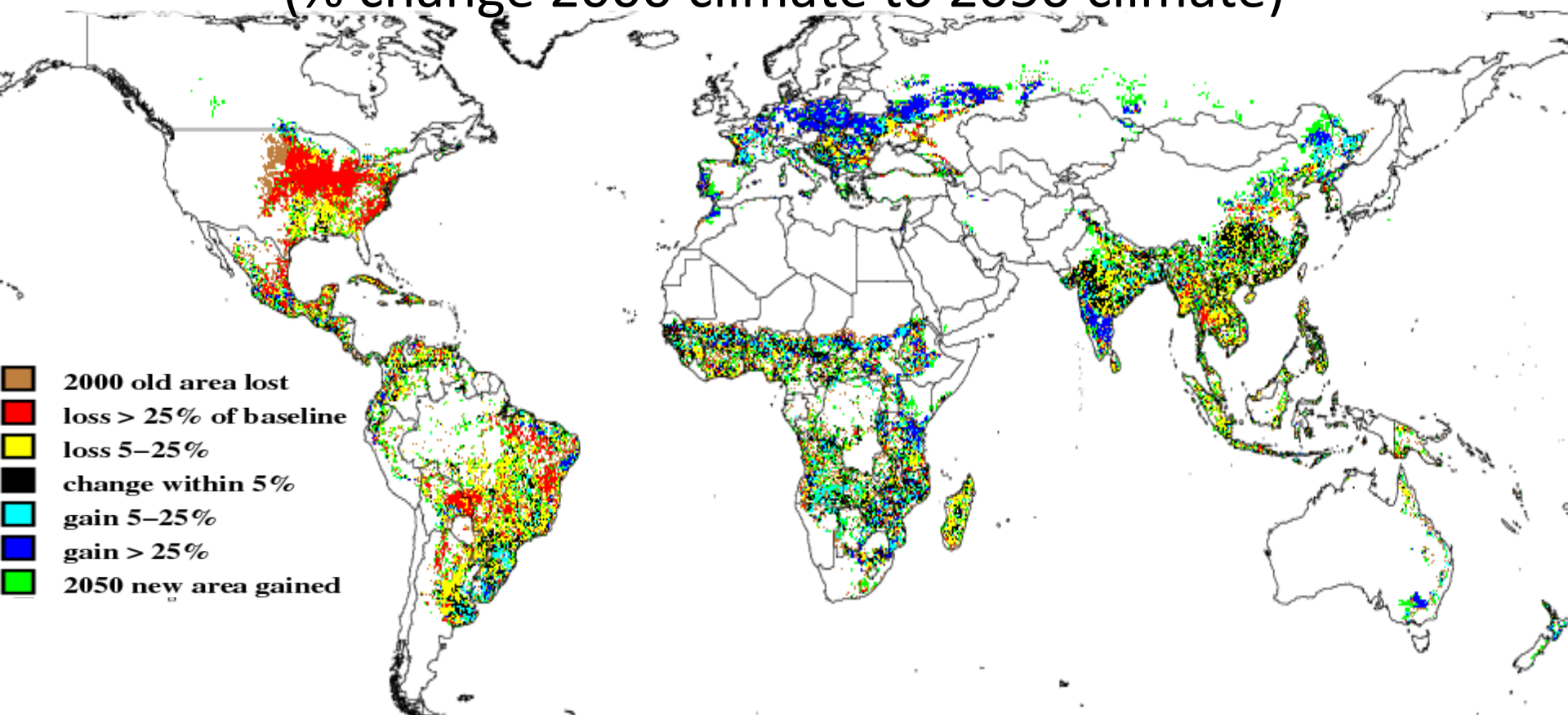


# Yield Effects, Rainfed Maize, *CSIRO* A1B (% change 2000 climate to 2050 climate)





# Yield Effects, Rainfed Maize, *MIROC* A1B (% change 2000 climate to 2050 climate)







# FROM GLOBAL FUTURES PROJECT TO PROGRAM



# Why do *quantitative* modeling for strategic foresight?

- What are quantitative models?
  - Mathematical descriptions of biological/socioeconomic processes
  - Calibrated with real world data
- Why model quantitatively?
  - When interactions become too complex to understand intuitively
  - When costs of modeling are less than the benefits
  - Global consistency



## **Global Futures Program has two elements:** ***Multidisciplinary Center-based Teams***

- Plant and animal breeders, physiologists, soil scientists, economists
- What will they do?
  - Identify technically promising options for technology enhancements
  - Adapt/improve production/system-specific models
  - Help design critical experiments and data collection protocols



## **New Approach with Two Elements:** ***Coordinating Unit***

- Develop integrated methodologies and tools
- Ensure that models are evaluated based on the science behind the components, including uncertainty
- Ensure that the models and outputs are transparent
  - E.g., open source utilizing GPL licenses
- Support multidisciplinary teams



# Outputs

- Systematic transparent comparisons of ex ante evaluation of promising technologies
- Strategic foresight quantitative modeling tools for Outreach
- Food Security Futures Conference
  - first scheduled April 11-12, 2013
- Capacity building
  - To increase range of foresight tools available to users