

Modeling and Forecasting Climate Change, Biophysical Impacts, and Ecological and Economic Implications: Discussion

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Implications for Risk Assessment & Policy Design

- Representing spatial and temporal variability to characterize *outcomes* people care about
 - climate (not just temp!) spatial and temporal scale
 - limits of crop models: extremes & thresholds; systems
 - relevant indicators: vulnerability? average calorie availability vs risk of deficit? environmental indicators? price variability?
- Adaptation as an investment problem: need to differentiate impact from value of adaptation
 - limits of statistical and IA approaches

- Scope of impacts:
 - going beyond grains: fruits, veges, livestock, ornamentals...
 - poverty and food security
 - environment, ecosystem services
- Policy interactions (Antle & Capalbo 2010 *AEPP*)
 - GHG mitigation
 - linkages to domestic, trade policy
 - effect on flexibility, e.g. conservation
 - trade implications of mitigation policies
 - long-term investments: infrastructure
 - how to “put climate” into policy process?

Broader Concerns

- Impact Assessment Perspective: are we following principles of good science?
 - the danger of GIS
 - experimental design perspective
 - ag-specific future scenarios linked to RCPs and SSPs: Representative Ag Pathways
 - future technology, prices, policy
 - towards an ensemble approach to quantify uncertainty, improve quality of the science:
 - integrating & improving data: documenting RAPs, model inputs & outputs
 - integrating & intercomparing within and across scales

Prototype Economic Model Framework for Simulation and Intercomparison

