Modeling and Forecasting Climate Change, Biophysical Impacts, and Ecological and Economic Adaptations

Forestry and Agriculture Greenhouse Gas Modeling Forum

September 28, 2011

Session questions

- *Climate Change (CC)*
- *Biophysical Impacts and Ecological Adaptations*
- *Economic Impacts and Adaptations*

- **What is the state of the art: findings?**
  - Relationships between CC measures and biophysical impacts (threshold effects; interactions among temp, precip, ozone, CO2 fertilization)
  - Current (observed) and future (forecast) impacts and adaptations (role of water availability, pest dynamics; economic adjustments in shifting product mix, trade)
  - Uncertainties: How think about them (measures, sources)? How big are they?
- **What is state of art: modeling & forecasting?**
  - Do models capture critical relationships?
  - Do they provide right types of information and at spatial and temporal scale needed to link across models?

Where are we? where do we go from here?

- What are the implications of *uncertain* impacts and adaptation forecasts for policy makers and risk managers?
- What implications follow for model, data improvements that will make the greatest difference in managing risks, promoting adaptation, and designing supporting policies?
  - Forecasting: how construct future scenarios?
  - Uncertainty challenges: separating underlying variability vs. noise? cascading uncertainties across climate/biophysical/economic models?
  - Targeting improvements to reduce uncertainties: what are the highest priorities to improve decision-making?
    - in models? data to populate models? information passed from one type model to the next (What measures? What temporal & spatial resolution/aggregation? How incorporate variability: beyond means?)
- How think about and communicate uncertainties to better inform policy makers and risk managers?