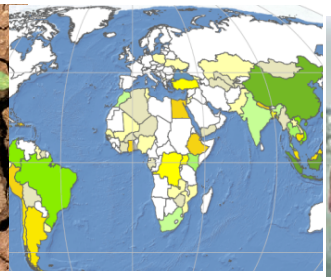
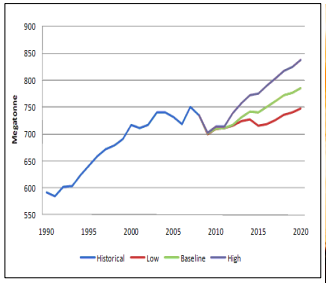
Policy Drivers and Information Needs

Workshop on Scenarios for Climate Research and Assessment

July 31, 2013, Snowmass, CO

Dr. Jonathan Pershing

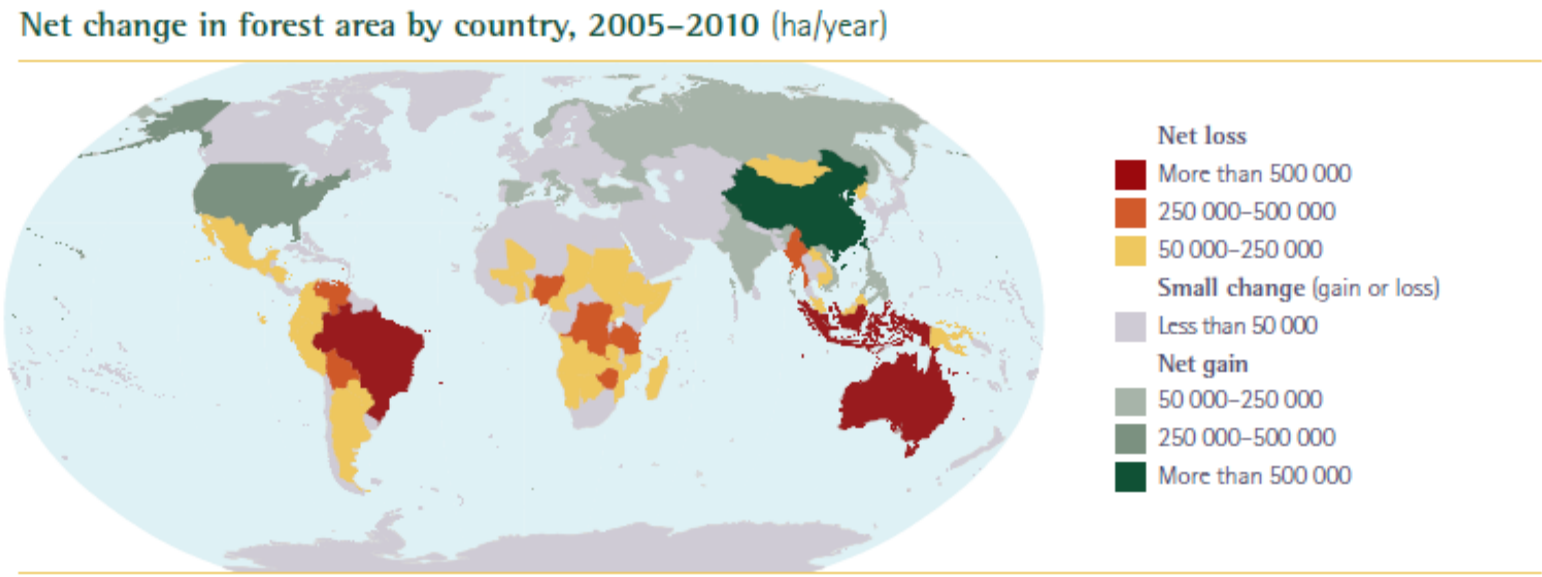
Deputy Assistant Secretary for Climate Change, US Department of Energy

Key Issues

- Land use
- Non-CO2 GHGs
- Overshoot
- Some additional issues/questions

Land Use Change

LULUCF (1)



- **Deforestation/afforestation/reforestation impacts on climate (including local and regional climate change)**
- **Climate impacts on forest (including effects of temperature, precipitation and CO2 fertilization feedbacks)**
- **Basins (how detailed a mapping?)**

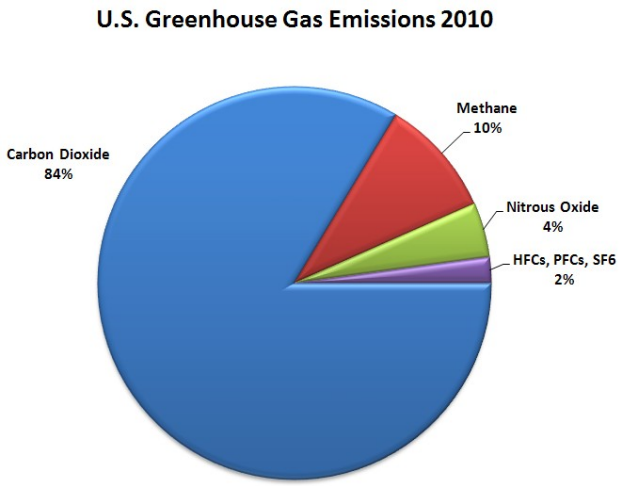
LULUCF (2)

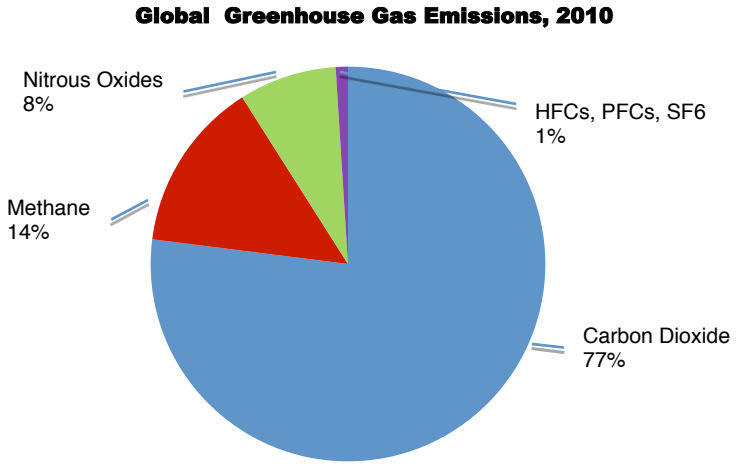
- **Inter-linkages:**
  - **Food - water- climate linkages and feedback**
  - **Land and energy relationships (biofuels, including tradeoffs in CO2 and other GHGs)**
  - **Other issues: biodiversity, other ecosystem services**
- **Accounting limits / modeling uncertainty (including extrapolation from today's uncertain data)**
- **Institutional issues and role in forest management**

Non-CO_2 Forcers

Short-lived Forcers (1)

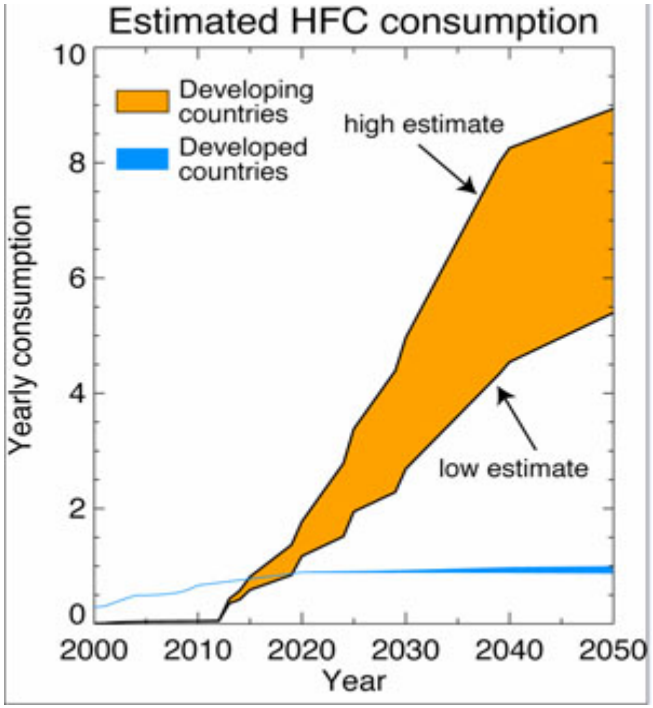
- **Drivers (natural and anthropogenic)**
  - **Methane: agriculture (including ruminants) oil and gas, landfills, coal-bed emissions, climate induced Arctic release**
  - **Black Carbon: biomass burning, diesel**
  - **HFCs: A/C, foaming agents**
- **Climate impacts on emissions and feedback (eg, tundra, albedo)**
- **Understanding GWPs**





Short-lived Forcers (2)

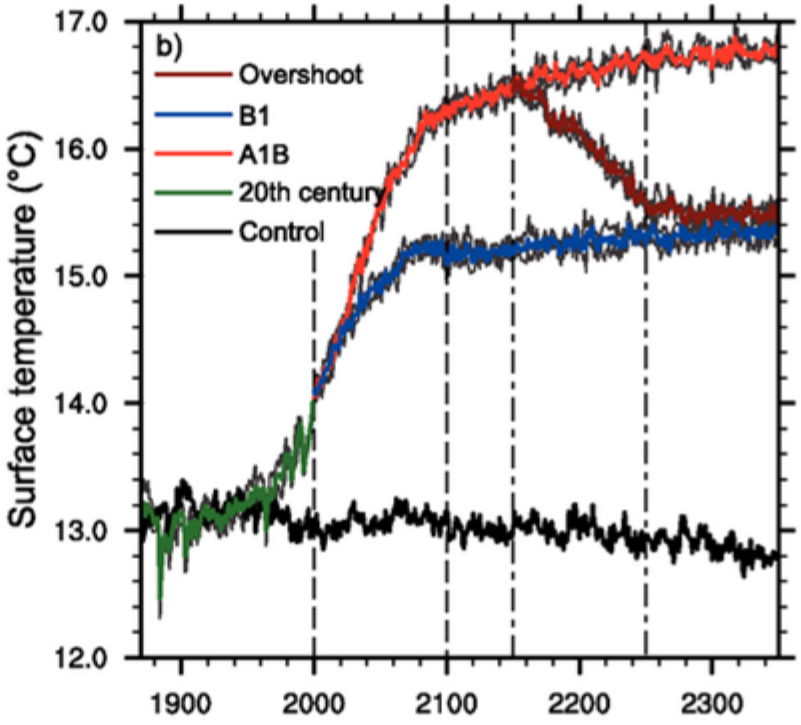
- CCAC
  - Initiatives (BC: diesel vehicles, cookstoves, brick kilns; Methane: oil and gas production and distribution, landfill, agriculture; HFC: district cooling)
- Near term vs. longer term trade offs
  - Relative merits of investing in short lived forcers vs. in other gases (rate of climate change vs. magnitude)
- Regional vs. global effects and how to evaluate impact



Overshoot

Some Questions

- Getting to 2° C: Is it realistic to anticipate effective overshoot (scientifically and institutionally)?
- What can we say about the implications for extreme/catastrophic events vs. slow onset change in an overshoot scenario?
- How high can we go and are there plausible limits to the rate of post-peak reduction (and what are the ecological impacts at different rates)?
- What are the implications of a negative emissions model (in technology, in policy)?



Some Additional Issues

- Value of integrated models rather than discrete sectoral policy models or impact models
- Avoiding normative outcomes (eg, implicit liability in discussions of loss and damage; understanding baseline evolution)
- Tradeoff in mitigation vs adaptation
- Trade off in impacts (insight on how to prioritize resiliency investment and insight on evolution of adaptive capacity)
- Transition effects - consequences of change vs consequences of new equilibrium
- Extreme/catastrophic events vs. slow onset change