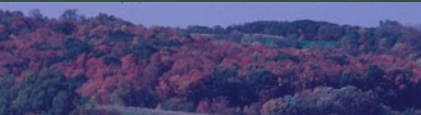




Actions to
to Address Climate Change
In the Land Use Sector



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Why do we care about land use and climate change?

- **Climate change** affects land uses.
- Forests and crops exist in an atmosphere that is **increasing in concentration of CO₂**.
- Forests and agricultural lands are **important sources of greenhouse gases and carbon sinks**
- The land use sector offer **potentially significant low-cost opportunities** to address climate change

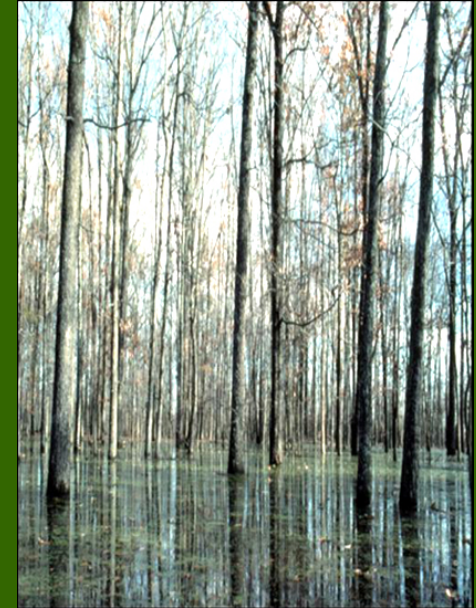


Thematic areas within the US Approach to Land Use and Climate

- **Cooperative conservation**
 - Partnerships with farmers and landowners to address conservation and environmental concerns
- **Adaptive management**
 - Learning by doing
- Integrate conservation and environmental decisions
 - Focus on actions with **multiple benefits**
- Utilize market-incentives to **prioritize resource allocation**
 - Bidding systems
 - Markets for environmental services (wetland banks, water quality improvements)
- Develop **clear metrics** for assessing benefits

Private land conservation programs

- USDA administers **\$4.7 billion each year** to support conservation on private lands
- USDA has made carbon sequestration and GHG reductions **priority resource concerns**
- We awards points for actions that increase carbon sequestration in evaluating proposals
- We and the Fish and Wildlife Service are **targeting tree planting** through the bottomland hardwood initiative
 - In FY 2006, **50.6Tg CO₂** were sequestered on land enrolled in the Conservation Reserve Program – our largest land conservation program
 - The Environmental Quality Incentives Program is expected to **reduce 26 Tg CO₂e** in 2012 from changes in soil management and **8.4 Tg CO₂e** from anaerobic digesters



Public land activities

Mitigation

- Reduce environmental “footprint” of agency operations
- Pursue voluntary partnerships
- Manage federal for carbon (as part of multiple benefits approach)

Adaptation

- Address climate change in management and land-use planning

Bioenergy and Bioproducts

- Encourage sustainable use of waste biomass and other woody materials
- Managing fuel loads – Healthy Forest Initiative

Improved science and tools

- Develop and deploy technology and science to improve management on public and private lands

Quantifying Results -- USDA Developed metrics to calculate land owner's GHG footprints

Inventory methods for all agricultural GHG sources – including:

- Enteric fermentation
- Manure management
- Nitrogen fertilizer applications
- field residue burning
- rice production
- lime applications

Methods for estimating increases in carbon sequestration

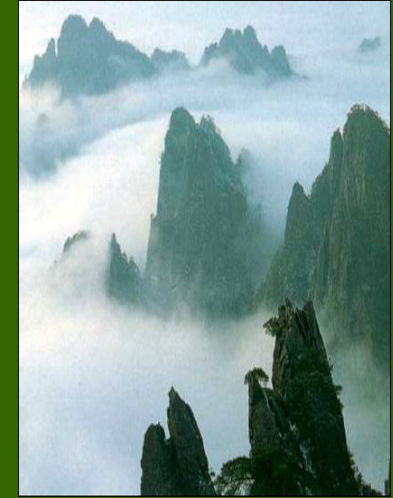
- Default carbon yield tables by region, species, management intensity, productivity class
- Models
 - COLE Model
 - Forest Vegetation Simulator
- Measurement and sampling protocols

International Activities

- Land-based mitigation and adaptation activities, including sustainable forest management (SFM), offer significant development benefits.
- US partnerships and assistance aims to:
 - Build country capacity
 - Improve community livelihoods
 - Strengthen governance
 - Sustain global benefits
 - Promote political frameworks for action



Examples of International Activities



- **Partnerships** support enabling conditions for landscape restoration, improved forest governance, and market transparency
 - Sustainable Forest Products Global Alliance (SFPGA)
 - Global Forest Landscape Restoration (GFLR) Partnership
- **Improved Political frameworks** that encourage action
 - Forest Law Enforcement and Governance (FLEG) processes
 - President's Initiative Against Illegal Logging (PIAIL)

Examples of International Projects



- **Technical support** for land-use and forest carbon inventories

- EPA in Central America & SE Asia
- Support for “Criteria and Indicators” processes for SFM
- USAID and NASA’s SERVIR program

- Encourage **Regional Cooperation** to enable SFM

- Congo Basin Forest Partnership
- Regional Asia Forests and Trade program

Examples of International Projects

- **Support Capacity Building** through bilateral assistance



- Cooperation for improved forest governance, including technologies for monitoring the forest sector in Indonesia
- Cooperation with Mexico on wildfire mitigation and suppression, community based forest management, and forest inventories
- Cooperation with Russia on wildfires, and sustainable biomass utilization
- Cooperation with China on research related to Climate Change, forest carbon inventories and management of invasive species.
- Liberian forest sector reform

Conclusions

- Land-based mitigation can play a major role in a response to climate change
- Forest and land use activities can directly benefit economic growth while providing climate and other environmental benefits
- Forests and agriculture are vulnerable to climate change and US is developing adaptation responses
- US programs are at the forefront of:
 - Encouraging actions on private lands
 - Developing cost-effective GHG estimation techniques
 - Creating the enabling conditions for sustainable land-use activities
 - Building developing country capacity
 - Improving our understanding of the effects of climate change and mitigation strategies