Mitigation options and land use

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Climate change & development

- Economic
  - Linking to markets
- Environmental
  - GHG emissions
  - Vulnerability to climate change
- Society
  - Acceptable development pathways/equity
Role of land use in development

- Food, feed & fibre
- Jobs & income
- Services & goods

Production and processing
Agriculture and land use

- Trends in production oriented agriculture
  - Specialization
  - Intensification
  - Concentration
  - Innovation & efficiency

- Trends in services & goods oriented agriculture
  - Income diversification
  - Combination of functions (recreation, care, landscape, nature, water, carbon, …)
Global Agenda

- Millennium Development Goals and PRSPs
- Greening of development finance
- Poverty eradication and adaptation to climate change (multi-donor initiative)
- OECD export crediting
- Development lending (WB, Reg Dev Banks, IMF) and bilateral development assistance
- WTO/Doha round
- Agricultural subsidy removal and implications for biofuel production and exports
- Forest products issue on Doha agenda
- Public Private Partnerships (post WSSD):
Need to resolve

- **Inventory of stocks**
  - Focus on concentrated large stocks: Forest, permafrost, organic soils?

- **Assessment of risks**
  - Inventory of threats: climatic, pressure on the land, rate of loss/accumulation rate, ...

- **Options for intervention/management**
  - Is management possible & effective (environmental, economic), need for a multi gas-approach

- **Mainstream climate objectives (mitigation & adaptation) into development objectives**
  - Search for co-benefits i.e. poverty alleviation, economic growth
Inventory of stocks & sources

Above ground: land cover

Livestock densities (Lerner, J. and E. Matthews)

Soil (FAO)

N input (FAO)
Assessment of risk

Land use change
deforestation (e.g.: Trees series)

Demographic development (2000 -)

Climate Change
Options for intervention/management

Forest maps (UNEP)

Fires (e.g. JRC, 2005)

FAO
Biomass production

Very large mitigation potential.
Peatland rehabilitation and conservation

<5% of total land area
Estimated size of carbon stock is 20 to 35% of total terrestrial carbon stock

- Biodevity conservation
- Enhanced resilience
- Avoided emissions
- Improved health
- Reduced haze
- Fire management
- Improved land and water management
- Peatland rehabilitation
Rehabilitation of degraded land

>80% of the farmland in Sub-Saharan Africa is plagued by severe degradation.

More than 60% of Africa's population is directly engaged in agriculture; but crop productivity has remained stagnant, while cereal yields in Asia have risen three-fold over the past four decades.
Mitigation

- Low cost: Degraded lands
- High cost: Peatland, Avoiding deforestation
- Certain: Modern biofuels
- Uncertain:
## Co-benefits

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<tr>
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<th>Biodiversity</th>
<th>Poverty alleviation</th>
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<tbody>
<tr>
<td>Modern biofuels</td>
<td>-/+</td>
<td>++</td>
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<tr>
<td>Degraded land</td>
<td>+</td>
<td>+++</td>
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<tr>
<td>Peatland</td>
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Concluding remarks

- Conserving large stocks: environmentally effective
  - focus on managed lands: e.g. tropical peats (fires, drainage), deforestation
- Biomass production: opening new opportunities
- Combining adaptation and mitigation as part of development makes sense for land use systems
- Linking to development: address issues outside UNFCCC climate agenda linked to the MDGs (e.g. via degraded lands).
Thanks