Tropical Forests for Adaptation to Climate Change

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Adaptation - a growing issue
Publications on adaptation (not only related to forests and adaptation)

(Janssen, 2007)
Forests and climate change in the literature

Less work on forests and adaptation, especially in the tropics

Adaptation and forests: Not growing

Forest and climate change in 4 journals
• Global Environmental Change
• Climatic Change
• Climate Policy
• Mitigation and Adaptation Strategies for Climate Change
296 articles

Forests and Adaptation

• Adaptation for forests
  – Impacts of climate change on forests
  – How to adapt forests and forest management?

• Forests for adaptation (= Forest-based for adaptation)
  – This presentation
Forests = Providers of ecosystem services

Direct benefits to societies

Socioeconomic sectors vulnerable to climate change (according to the IPCC)

They all depend on ecosystem services

(Locatelli et al. 2008)
Vulnerability and ecosystem services

Vulnerability:
Exposure
- climate change
Sensitivity
- ecosystems/society
Adaptive capacity
- ecosystems/society

Forest ecosystem services and vulnerability
Regulating services – e.g. role of forests in the hydrological cycle = reducing exposure
Forest ecosystem services and vulnerability

Forest ecosystem services = reducing the vulnerability of society

Examples:
- Habitat provision for reducing species vulnerability
- Watershed protection for reducing landslides
- NTFPs as safety nets for local communities
- Strengthening social cohesion, important for adaptation

Examples:

Example 1: Cameroon (1/2)

- CoFCCA project (Congo Basin Forests and Climate Change Adaptation) in Cameroon, DRC, CAR
  - Participatory Action Research with communities in the forest-savanna transition zone
- Communities analyzing their vulnerability to climatic variability:
  - Agriculture and livestock activities = very sensitive
  - NTFP (non timber forest products) = less sensitive = safety net
Example 1: Cameroon (2/2)

- What do communities propose for adaptation?
  - Technical options for agriculture and livestock
    - Crop selection, livestock management
  - Management options for forests and NTFPs
    - Access, control, marketing… with measures at provincial or national level
    - As a way to reduce their vulnerability

Example 2: Costa Rica (1/2)

- TroFCCA project (Tropical Forests and Climate Change Adaptation) in 8 countries of Asia, West Africa, and Central America
  - Vulnerability of forests and forest-dependent sectors
  - Central America: emphasis on drinking water and hydropower
- Hydroelectric companies analyzing their vulnerability:
  - Trends: increasing intensity of precipitation
  - Siltation in dams: very high costs
  - Importance of upstream soil conservation is increasing
Example 2: Costa Rica (2/2)

- Proposals for adaptation:
  - Better watershed management linked with forest management
  - Payment for Ecosystem Services
    - Forest conservation
    - Forest restoration
    - Soil conservation in agriculture and agroforestry

Lessons learnt

- Need to include ecosystem services in adaptation
  - Often more effective, efficient, and sustainable than infrastructure or technological options of adaptation

- Need to link scales
  - upstream/downstream
  - communities/provinces/countries

- Use innovative mechanisms for financing
  - Payment for ecosystem services
Ecosystem-Based Adaptation: a tentative definition

- EBA: Adaptation measures or policies that harness ecosystem services for adapting society to climate change
- EBA considers:
  - The vulnerability of ecosystems (to land-use change, over-harvesting, climate change, etc.).
  - The links between ecosystem services and societal vulnerability
  - The need to involve stakeholders and decision makers beyond the forestry sector in managing or protecting forest ecosystem services
- EBA is necessarily:
  - Multi sectoral (forest managers + forest communities + sectors beyond the forest sector)
  - Multi scale (local, meso/watershed, national, regional, international)

Policies for Ecosystem-Based Adaptation

Ecosystem-Based Adaptation = Bridging Forest and Adaptation Policy arenas

Adaptation policies

Forest policies
Policies for Ecosystem-Based Adaptation

Mainstreaming adaptation into forest policies

Adaptation policies

Forest policies

Mainstreaming forests into adaptation policies

Policies for Ecosystem-Based Adaptation

Mainstreaming adaptation into forest policies

Adaptation policies

Forest policies

Mainstreaming forests into adaptation policies

Bringing adaptation into the forest arena:
- Adaptation in nfp's

Bringing forests into the adaptation arena:
- Forests in NAPA’s
- Adaptation Fund etc. financing schemes

Mainstreaming forests into adaptation policies
Thank you for your attention

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