

Réunion CoFCCA  
Bangui, 21 Septembre 2009

# Forêt et adaptation au changement climatique: les activités du CIFOR

Bruno Locatelli (CIRAD-CIFOR)

THINKING beyond the canopy





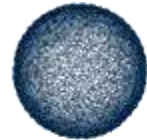
# Who we are

One of 15 CG Centers; one of 14 CPF members

# CIFOR and the CGIAR



# As a member of CPF family



COP15  
COPENHAGEN  
12-18 DECEMBER 2009

**Sunday, 13 December 2009**

Radisson SAS Falconer Hotel  
Copenhagen, Denmark  
Coinciding with  
the UNFCCC COP 15



**FOREST DAY**



Shaping the global agenda  
for forests and climate change

Hosted by the Collaborative Partnership on Forests,  
the Government of Denmark and CIFOR

**Sub-plenary:**

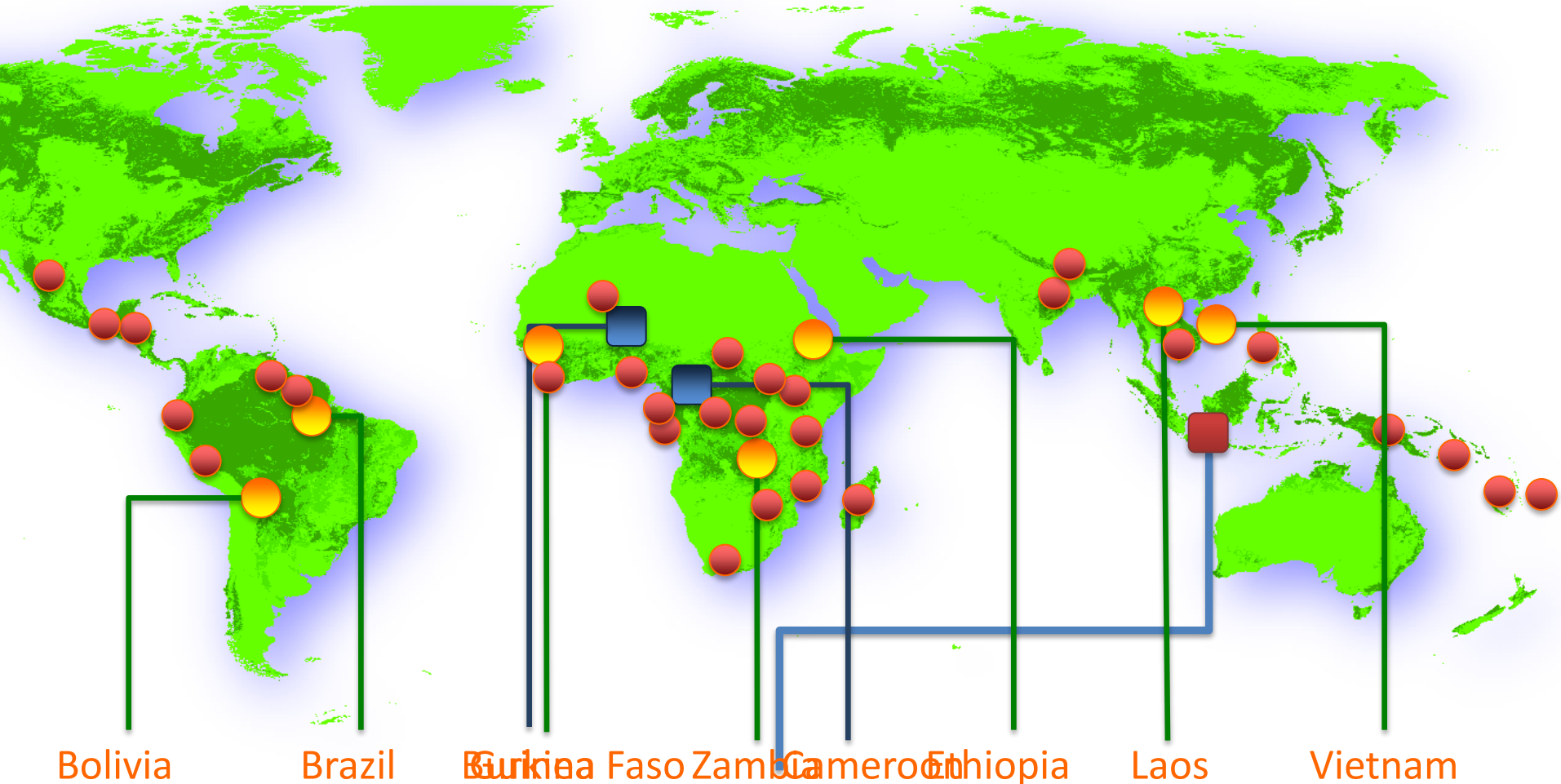
- Mitigation
- Adaptation
- DD and SFM



# How we work

- 200 staff globally
- A 'centre without walls', working in partnership with:
  - governments
  - non-governmental organisations
  - international organisations
  - development agencies
  - civil society
  - foresters
  - media
  - private sector

# Where we work



Headquarters:  
Bogor, Indonesia

27 Regional offices



# Our strategic research agenda

- 1 Enhancing the role of forests in **mitigating** climate change
- 2 Enhancing the role of forests in **adapting** to climate change
- 3 Improving livelihoods through **smallholder** and **community** forestry
- 4 Managing trade-offs between **conservation** and **development** at the landscape scale
- 5 Managing impacts of globalised **trade** and **investment** on forests and forest communities
- 6 Sustainably managing tropical **production forests**

# 1 Enhancing the role of forests in **mitigating** climate change

## Research themes

- Procedures and best practices for estimating and managing carbon
- Policies, governance conditions and payment mechanisms for REDD
- Political economy and barriers to adoption of policies for REDD



Research  
domain

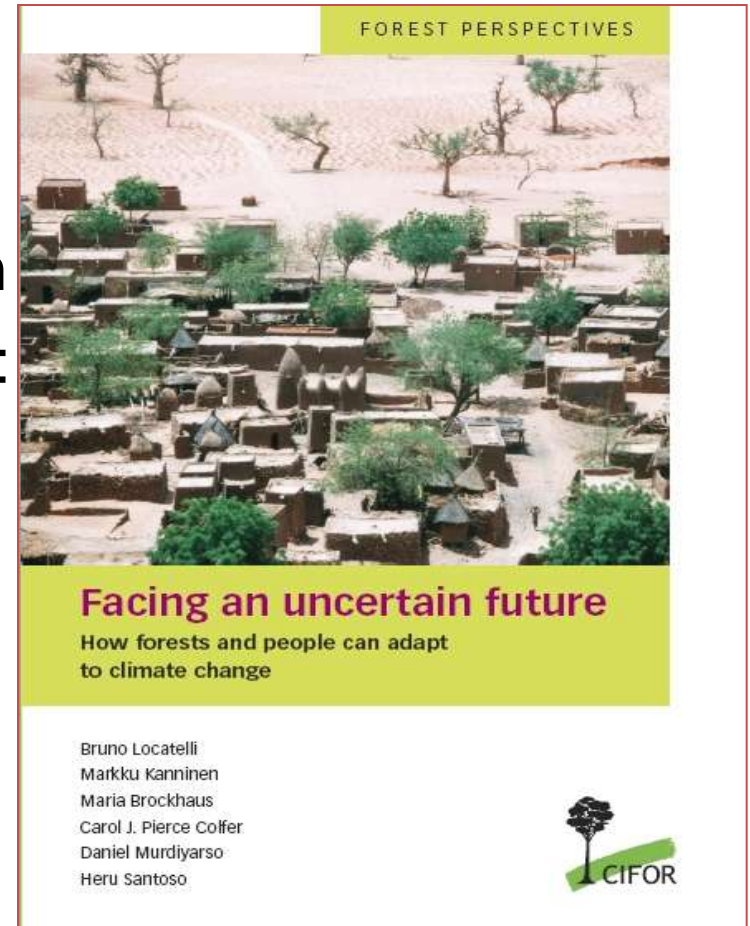
## 2 Enhancing the role of forests in **adapting** to climate change

### Research themes

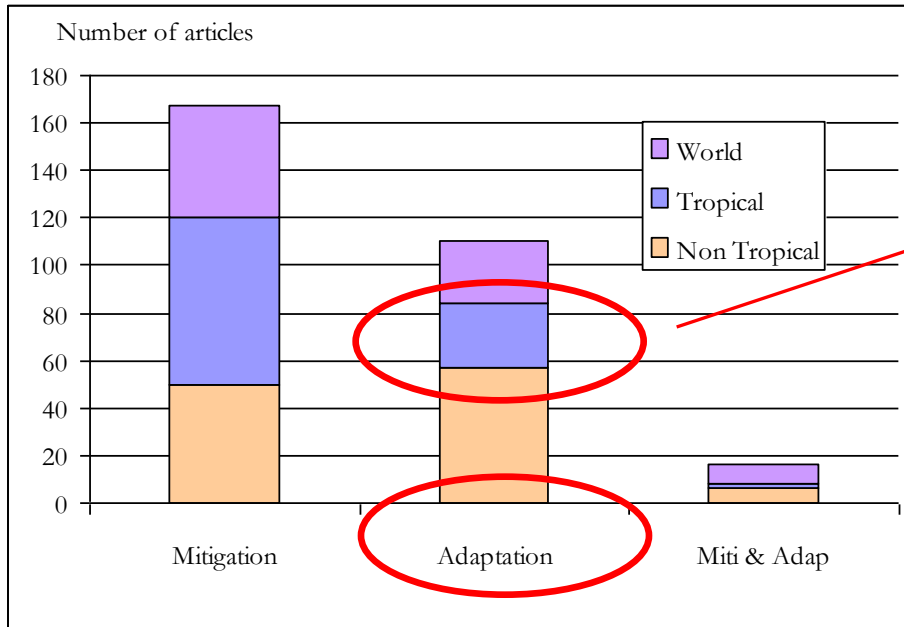
- Bringing climate change adaptation into forest management (“Adaptation for Forests”)
- Mainstreaming forestry into climate change adaptation (“Forests for adaptation”)

# Outline

- Forests and adaptation to CC
- Ecosystem services and adaptation
- Relevance of forests for adaptation:
- Lessons learned
- Financing adaptation
- Ecosystem-based adaptation

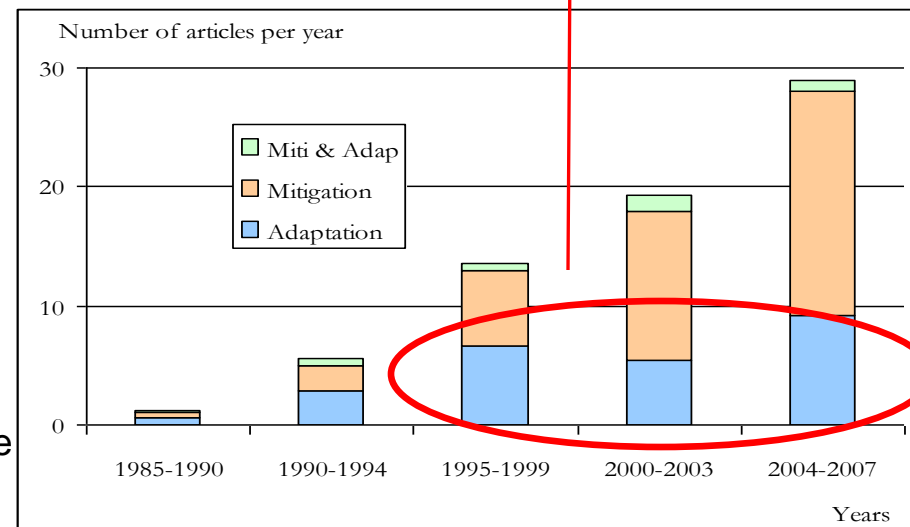


# Forests and adaptation (in the literature)



Less work on forests and adaptation, especially in the tropics

Adaptation and forests:  
Not growing

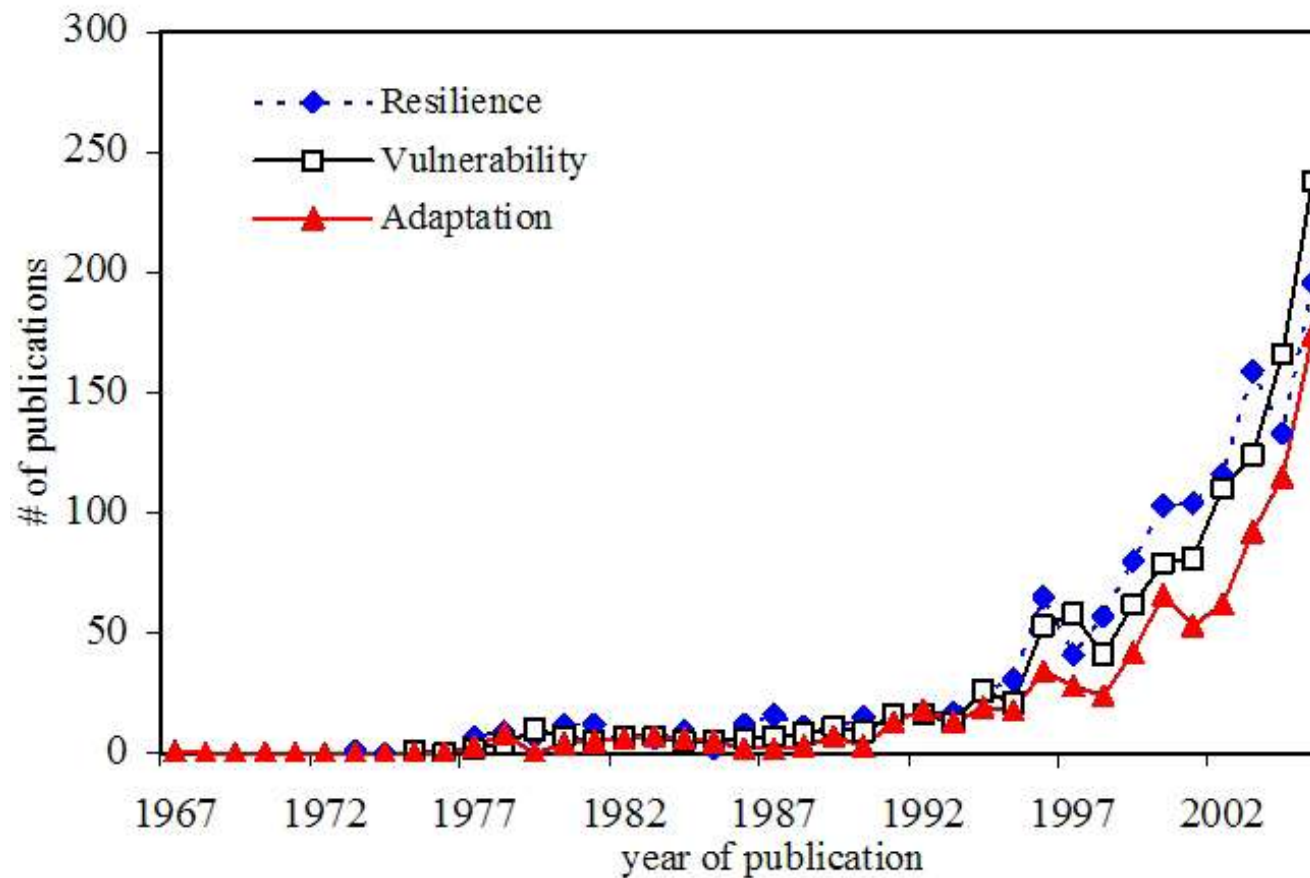


## Forest and climate change in 4 journals

- Global Environmental Change
- Climatic Change
- Climate Policy
- Mitigation and Adaptation Strategies for Climate Change

296 articles

# Adaptation – a growing issue



Source: Janssen (2007)

# Forests and adaptation

## (the scope)

### ■ Adaptation for forests

- Impacts of climate change on forests
- How should forests and forest management adapt to CC?

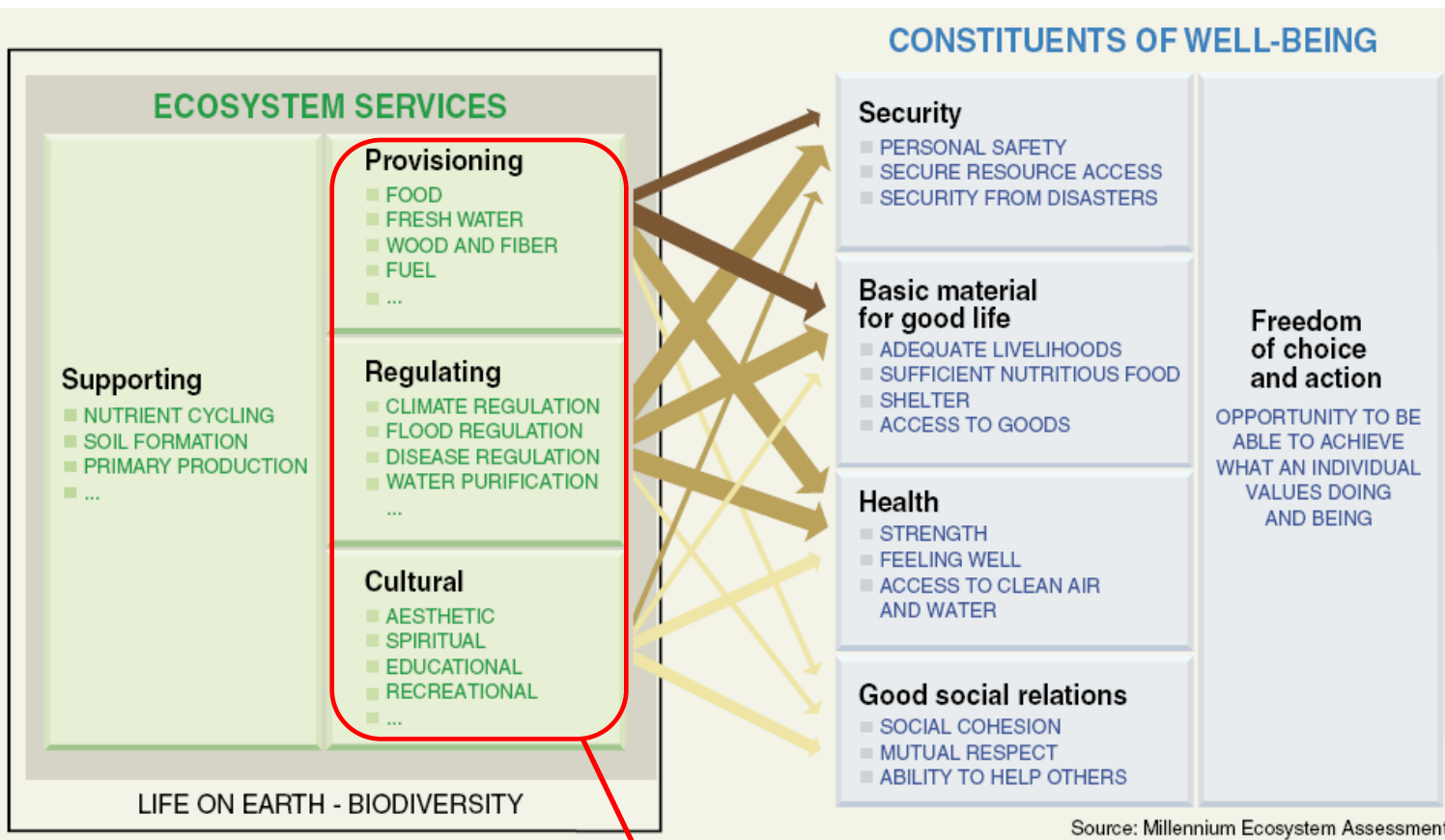


### ■ Forests for adaptation

(= Forest-based adaptation)

- How forests have been playing their roles as “buffer”
- How the community benefit from forest to adapt to CC
- => **This presentation**

# Forests: Providers of ecosystem services



Direct benefits to societies

# Ecosystem services and vulnerability

Vulnerability:

$$= f(E, S, AC)$$

- Exposure
- Sensitivity
- Adaptive capacity

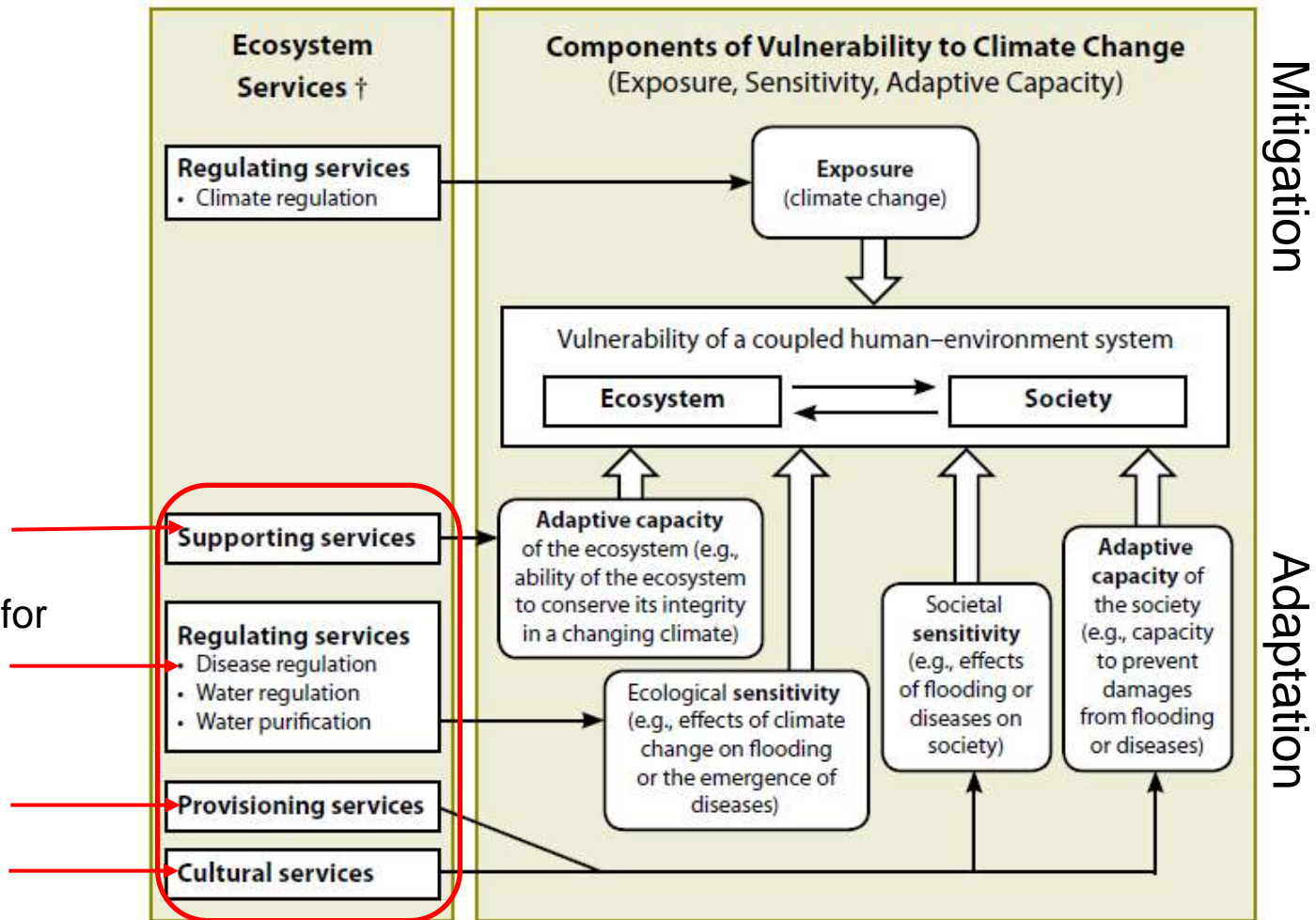
## Examples

Habitat provision for reducing species vulnerability

Watershed protection for reducing landslides

NTFPs as safety nets for local communities

Strengthening social cohesion



(Locatelli et al. 2008)

# Relevance of forests for adaptation: Examples from Central America (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 in Costa Rica:
  - Trends: increasing intensity of precipitation
  - Siltation in dams: very high costs
  - Importance of upstream soil conservation is increasing



# Relevance of forests for adaptation: Examples from Central America (2/2)

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



# Relevance of forests for adaptation: Examples from Asia (1/2)

- Social vulnerability to landslides in sloping areas
  - Population density
  - Land stability (geological characteristics)
  - Climatic patterns (extreme events)
- Role of forests in stabilizing slopes



# Relevance of forests for adaptation: Examples from Asia (1/2)

- Mangroves = protective role
  - Species and rooting system
  - Depending on the coastal topography
- Coastal storms
- CC-related sea level rise



# Relevance of forests for adaptation: Examples from Central Africa (1/2)

- CoFCCA project in Cameroon, DRC, CAR
  - Participatory Action Research with communities
- Communities analyzing their vulnerability to climate variability:
  - Agriculture and livestock activities = very sensitive
  - NTFP (non timber forest products) = less sensitive = safety net



# Relevance of forests for adaptation: Examples from Central Africa (2/2)

- 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



# Lessons learned

- Need to link scales/levels
  - Upstream-downstream (policy – implementation)
  - Communities-provinces-countries
- Need to include ecosystem services in adaptation
  - Often more effective, efficient, and sustainable than infrastructure or technological options of adaptation
- Use innovative mechanisms for financing, including PES

# Ecosystem-Based Adaptation: a tentative definition

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

# Policies for Forest-Based Adaptation

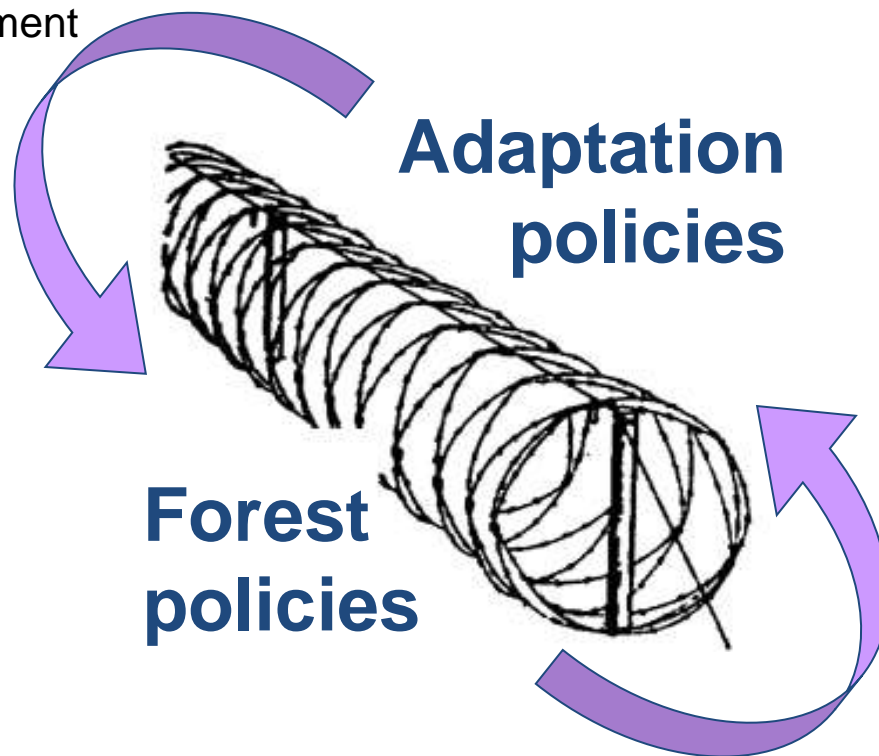
Ecosystem-Based Adaptation =  
Bridging Forest and Adaptation Policy arenas



# Policies for Forest-Based Adaptation

Bringing adaptation into forest arena:

- Adaptation in NFP's
- Fire management



Bringing forests into adaptation arena:

- Forests in NAPA's
- EBA in adaptation financing schemes

# Thank you

[www.cifor.cgiar.org](http://www.cifor.cgiar.org)



**THINKING** beyond the canopy

