

ADAPTATION OF FORESTS AND PEOPLE TO CLIMATE CHANGE

A global assessment by an Expert Panel

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BACKGROUND OF GLOBAL FOREST EXPERT PANELS (GFEP)

- CPF (Collaborative Partnership on Forests) launched in 2007 an initiative on Global Forest Expert Panels (GFEP)
- **Task:** provide forest-related intergovernmental processes (UNFF, UNFCCC, CBD) with up-to-date science-based information
- Expert Panel on Adaptation of Forests to Climate Change established as first thematic panel
- Other thematic Panels to follow in the future

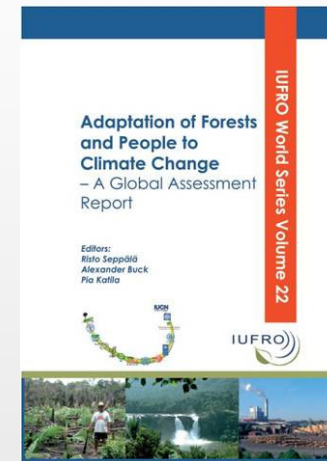
EXPERT PANEL ON ADAPTATION OF FORESTS TO CLIMATE CHANGE

- Task: assessment of climate change impacts on forests, implications for human wellbeing, and options for adaptation; no new research
- Almost 100 experts with broad range of scientific backgrounds; several IPCC scientists



PRODUCTS

- Peer reviewed scientific report “Adaptation of Forests and People to Climate Change – A Global Assessment”
- Policy brief “Making Forests Fit for Climate Change” (available in all official UN languages)





MAIN FINDINGS

OBSERVED ENVIRONMENTAL IMPACTS

- Climate change has already affected forest ecosystems and will have **increasing effects** on them in the future.



FOUR SCENARIO CLUSTERS FOR FUTURE PROJECTIONS

- **Unavoidable:** freeze of CO₂ concentrations at 2000 levels
- **Stable:** at the end of century approaching stabilization (new equilibrium) of CO₂ concentrations
- **Growth:** towards the end of century emissions grow 1 %/y (growth rate in the 1990s)
- **Fast Growth:** CO₂ emissions grow 3 %/year (current situation)

FUTURE ENVIRONMENTAL IMPACTS (1)

- At the global scale, forests can adapt to impacts of scenario “stable”, but there will be altered species compositions and changes in productivity
- Forest will have major difficulties to adapt to impacts of scenarios “growth” or “fast growth”, in particular in semi-arid and arid climate

FUTURE ENVIRONMENTAL IMPACTS (2)

- Beyond global warming of 2.5°C relative to pre-industrial levels, the **carbon-regulating services** of forests are at risk of being lost entirely as land ecosystems turn into a net source of carbon
- This loss of carbon-regulating services of forests would seriously **exacerbate** climate change and cause a dangerous vicious cycle (feedback loop)

REGIONAL IMPACTS (1)

- **Tropical forests:** increased productivity where water is available, but decline in dry areas; severely affected by “growth” and “fast growth” scenarios
- **Subtropical forests:** decreased productivity in most parts; short-rotation plantations provide opportunities; risk of severe biodiversity losses

REGIONAL IMPACTS (2)

- **Temperate forests:** less affected than other forest types; both increased and decreased tree growth; negative effects under “growth” and “fast growth” scenarios
- **Boreal forests:** particularly affected (more warming); increased tree growth in most areas; more fires, pests and storms

ALSO POSITIVE IMPACTS EXPECTED

- Climate change can also have positive effects on forest ecosystem services
- Climate change can increase the supply of timber in some regions and even globally due to increased tree growth; temporal variations

SOCIO-ECONOMIC CONSIDERATIONS

Projected increases in frequency and severity of extreme weather events and forest disturbances will have far-reaching social and economic consequences particularly for forest-dependent poor



MANAGEMENT OPTIONS FOR ADAPTATION

- Practices associated with **Sustainable forest management** (SFM) work well in reducing the vulnerability of forests to climate change.
- The current failure to implement SFM limits the capacity to adapt to climate change

POLICY OPTIONS FOR ADAPTATION

- Commitment to achieving the goals of SFM must be strengthened at both the international and national levels
- New modes of governance are required to enable stakeholder participation, and provide secure land tenure and user rights and sufficient financial incentives

KNOWLEDGE GAPS

- More information and knowledge is needed on
 - regional and local impacts on climate change
 - socio-economic impacts
 - the effectiveness of management and policy measures for adaptation

A photograph of a pine tree in a forest. The tree has a thick, reddish-brown trunk and dense green needles. The background is a misty, green forest. The text "KEY CONCLUSION" is overlaid in white, bold, sans-serif font in the center of the image.

KEY CONCLUSION

KEY CONCLUSION: ADAPTATION AND MITIGATION ARE COMPLEMENTARY

- Successful mitigation requires that forests retain their capacity to adapt to climate change
- Unmitigated climate change is likely to exceed the adaptive capacity of many forests in the course of the current century
- **Large reductions in emissions from fossil fuels and deforestation are needed to preserve the adaptive and mitigative capacity of forests**



Thank you for your attention !