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# Economic Impacts of Climate Change- Financial Implications

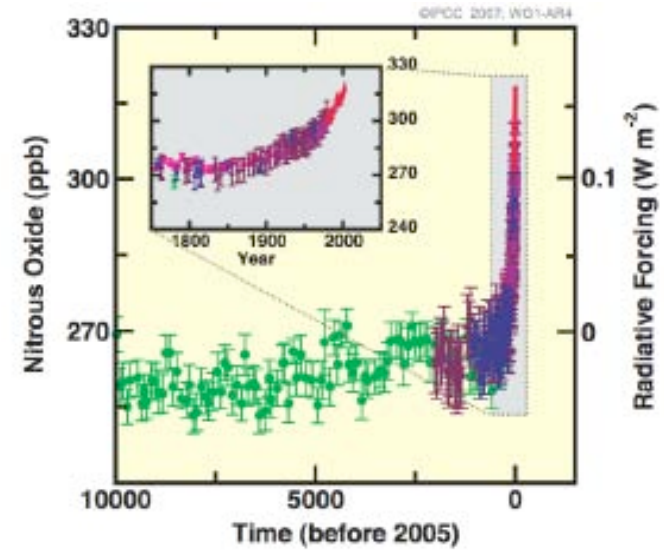
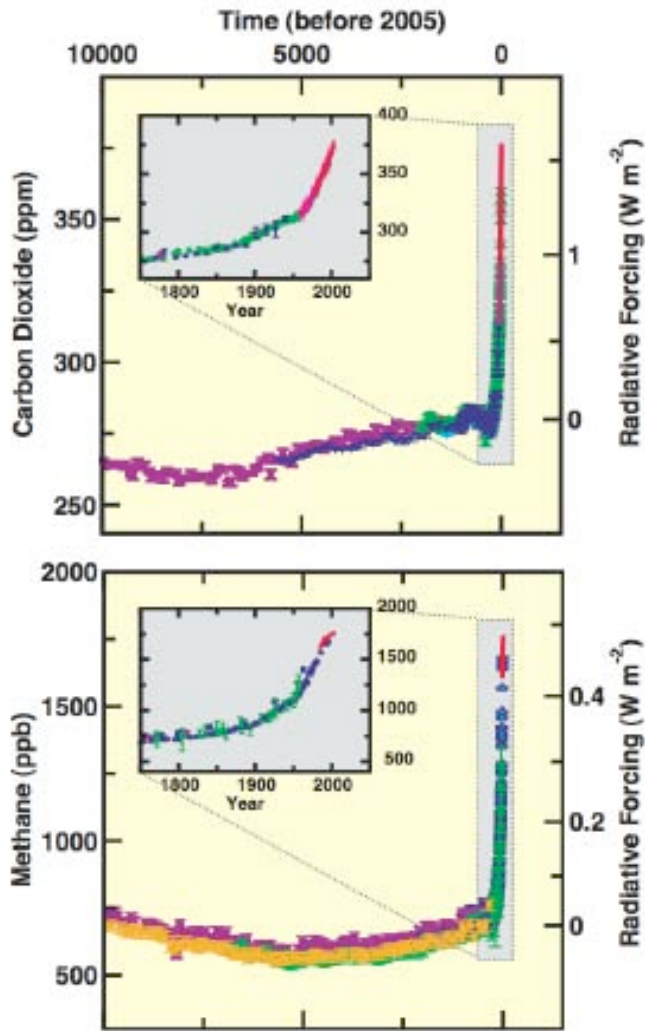
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**German Institute for Economic  
Research and Humboldt  
University Berlin  
26.3.2007**

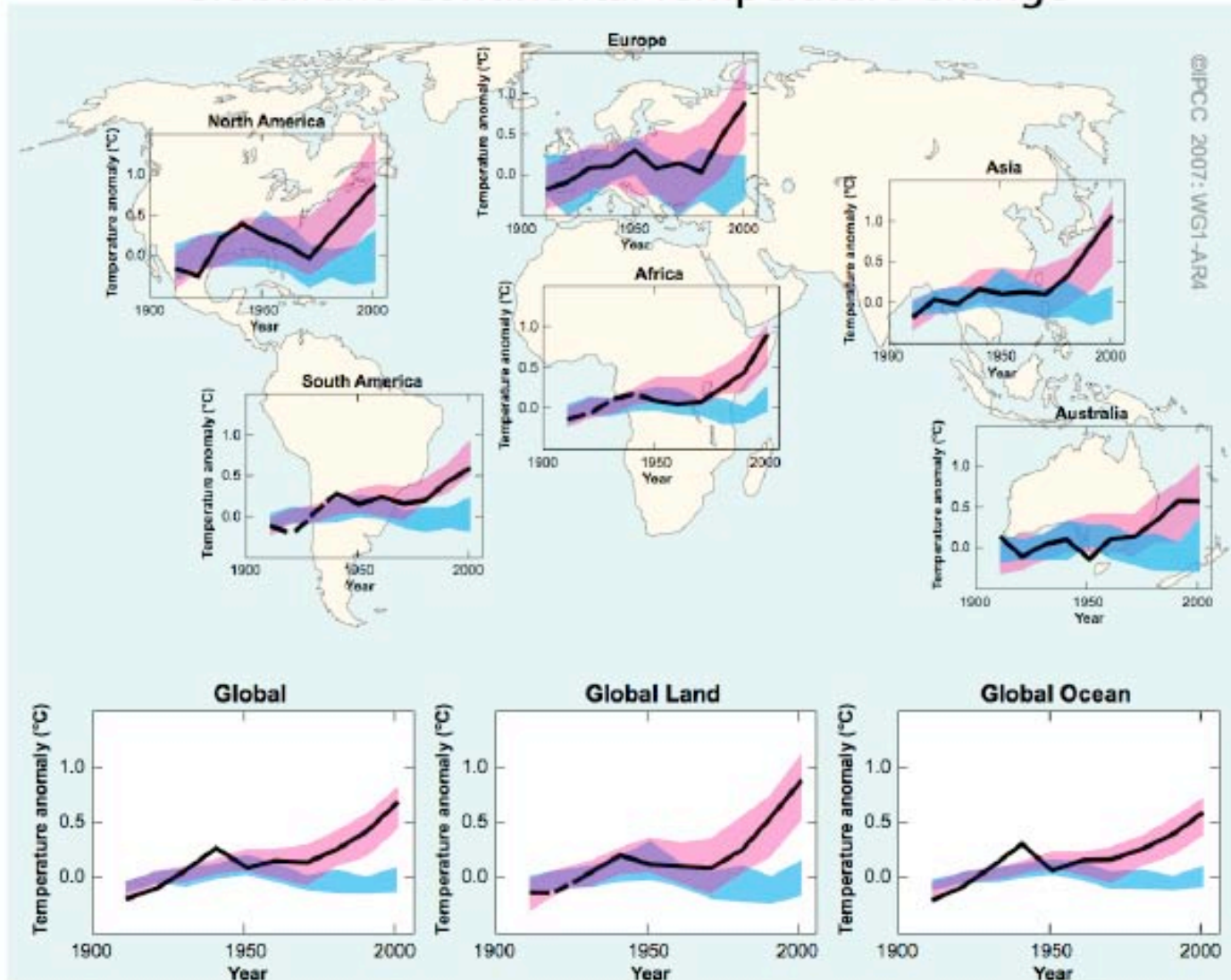


## **Reasons to concern**

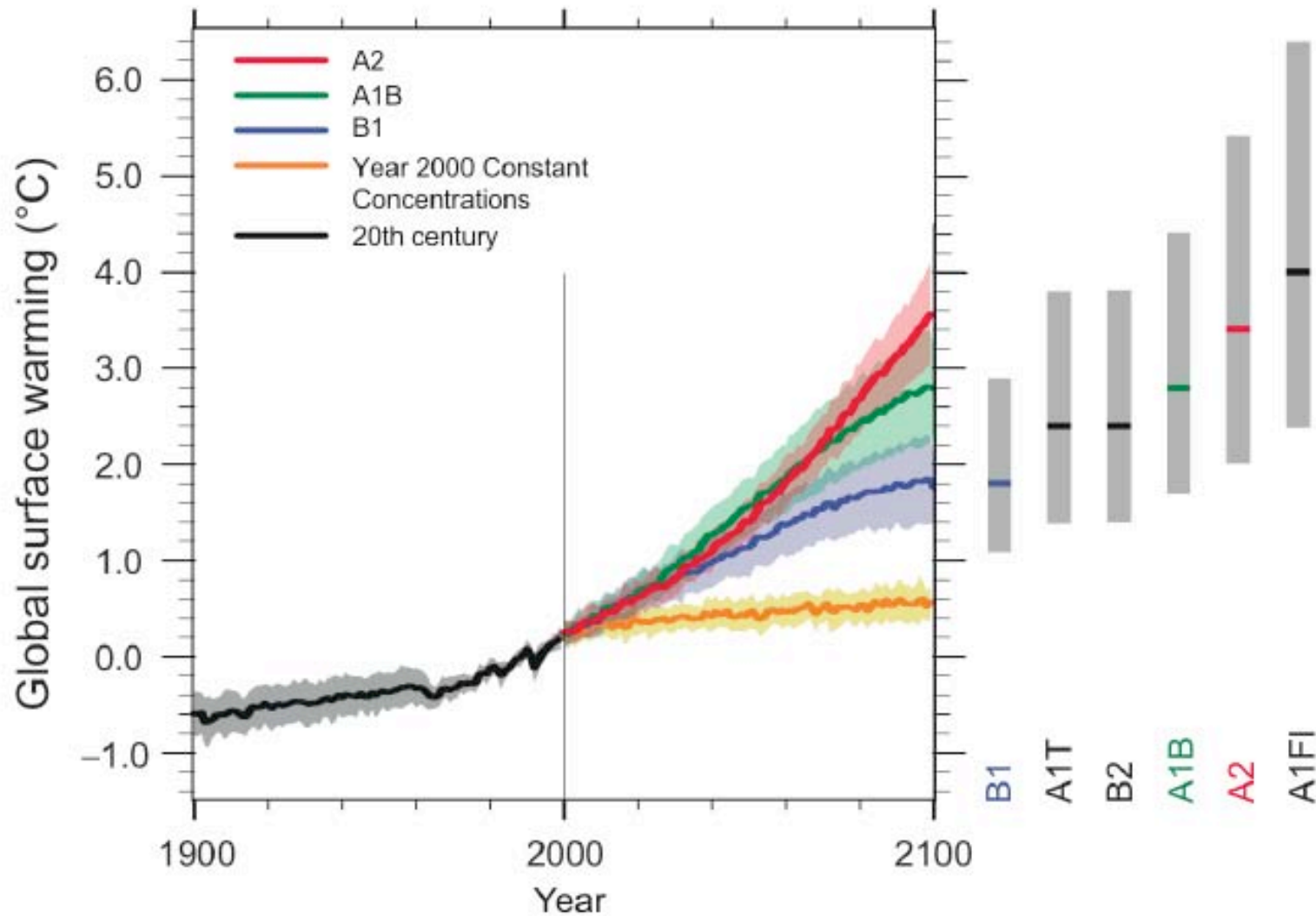
### Changes in Greenhouse Gases from ice-Core and Modern Data



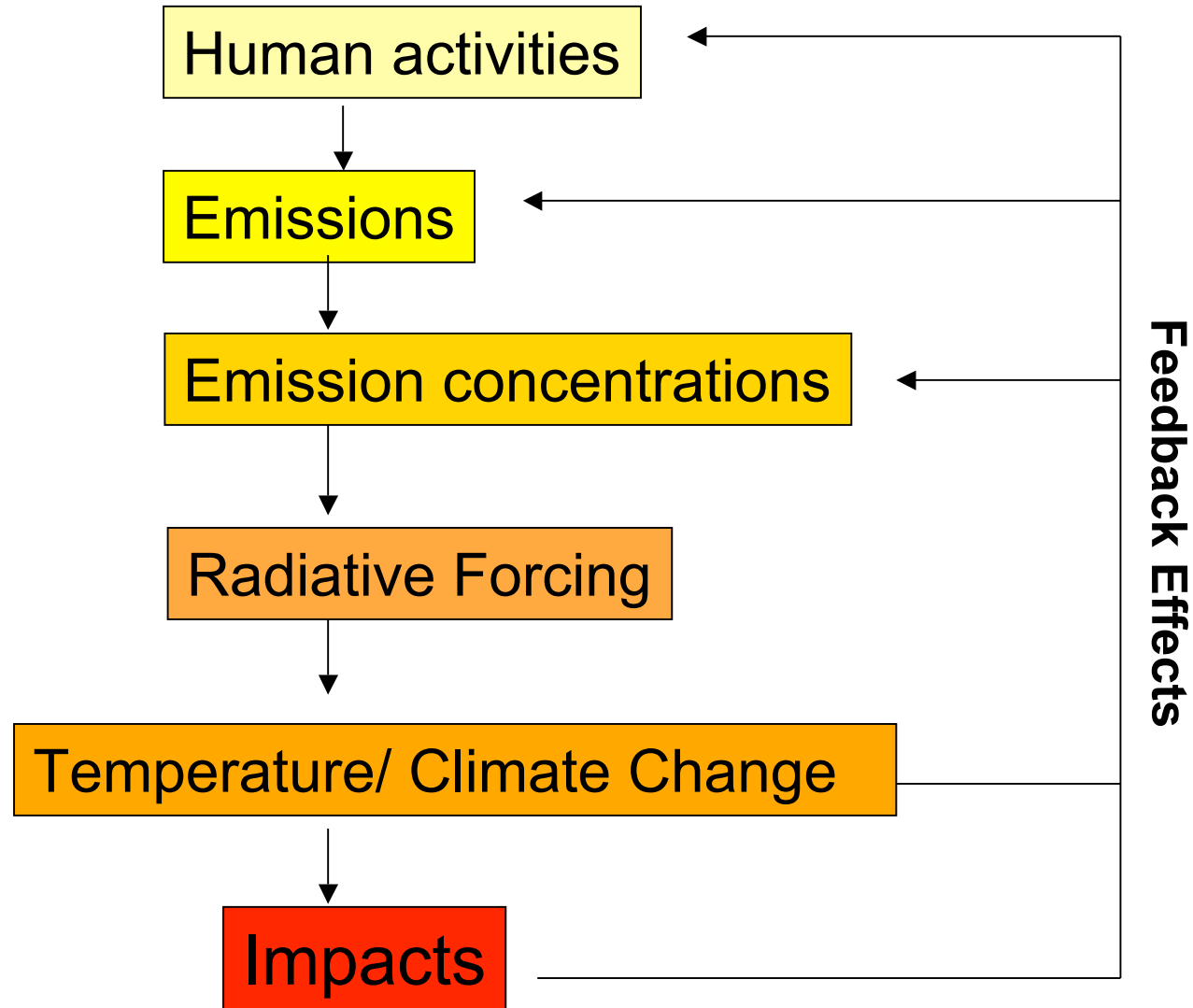
# Global and Continental Temperature Change



### Multi-model Averages and Assessed Ranges for Surface Warming



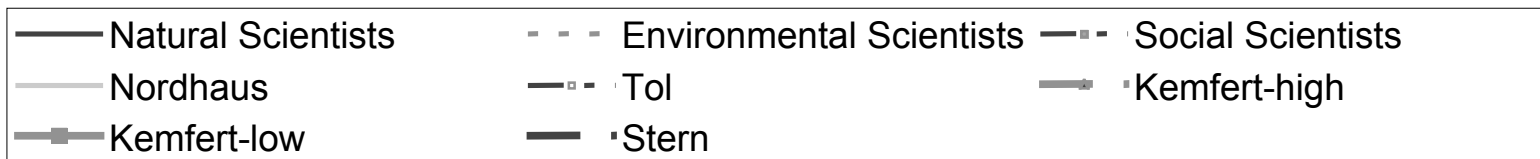
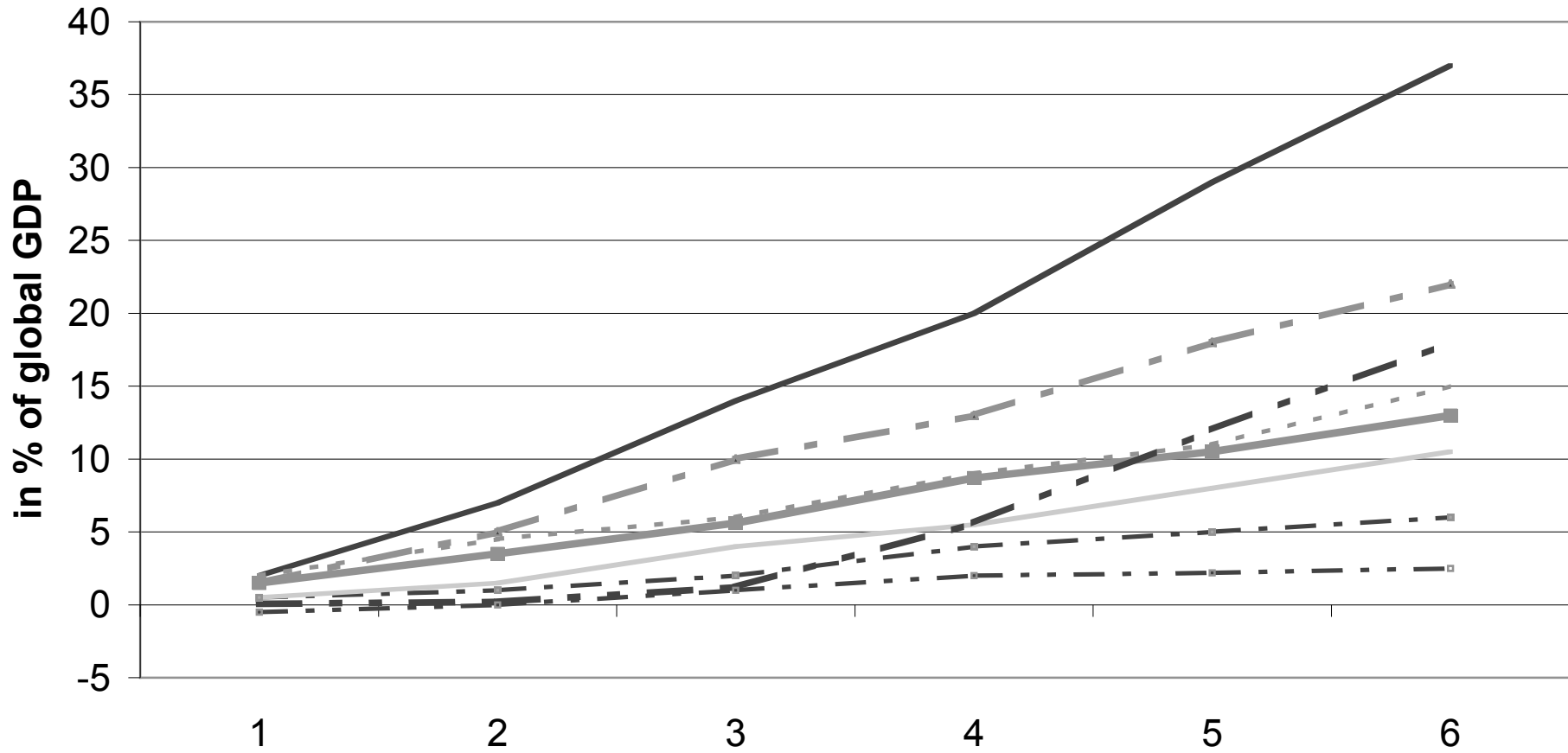
# From Emissions to Impacts



## Impacts of climate change

Damages	Adaptation	Energy Costs
<ul style="list-style-type: none"><li>• Buildings</li><li>• Infrastructure</li><li>• Agriculture</li><li>• Health</li><li>• Insurances</li></ul>	<ul style="list-style-type: none"><li>• Tourism</li><li>• Agriculture</li><li>• Health</li><li>• Households</li><li>• Energy</li></ul>	<ul style="list-style-type: none"><li>• Energy (supply disruptions, price variation)</li><li>• Households</li><li>• Energy intensive firms</li><li>• Transportation</li></ul>

# Economic Damages of Climate Change





## Affected Sectors

<b>Health</b>	Through Heat Waves, Storms, Flooding caused Health impacts
<b>Agriculture</b>	Reduced crop gains, reduced gain security through increased climate variability
<b>Forestry</b>	Increased vulnerability of non compatible tree types ; increased danger of forest fire
<b>Water</b>	Increased danger of floods (winter/spring) and low water (summer)
<b>Biodiversity</b>	Biodiversity hazard
<b>Transportation</b>	Impairment of air traffic because of air streams; and inland water navigation (low water)
<b>Tourism</b>	Sift of tourist areas (See/Alps)
<b>Energy</b>	Cooling disturbances (low water) ; grid (ice/storms)
<b>Finance</b>	Higher direct costs of liabilities of insurance companies ; speculation

## Energy Costs:

- Supply disruption (not enough cooling water, hurricane, ice,)
- Price variations
- Increase CO2 free technologies (late start- higher costs)
- Increase of R&D expenditures

## Policy Options

### 1. Climate Protection:

Emissions trading/Eco Taxes

Motor vehicle tax (CO<sub>2</sub>)

Promotion renewable energy /CHP

International climate protection: Inclusion USA/China

### 2. Adaptation:

- Coastal Zone Management
- Different cultivation methods in agriculture
- Tourism (from ski to hike etc)
- Heath funds



**Thank you very much for your attention!**

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