

TFIAM/EC4MACS
Workshop on uncertainty
treatment

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Laxenburg, November 3-4, 2010

Where are we now?

Results of the NIAM-meeting of 22-23 March 2010

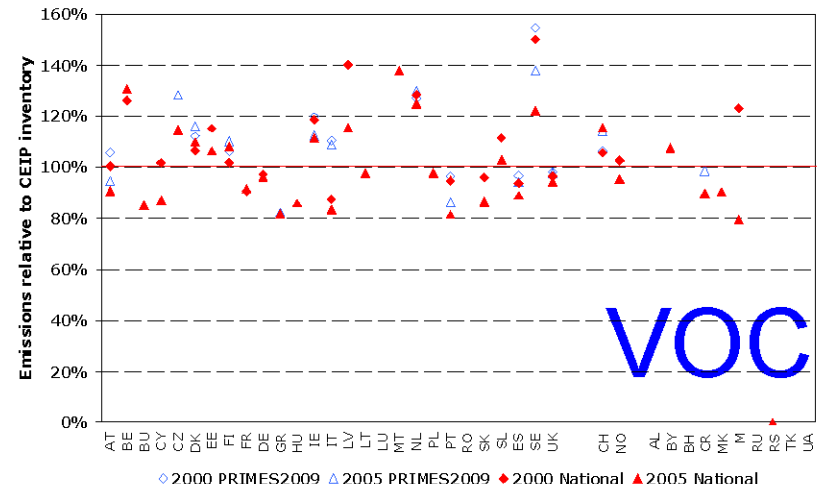
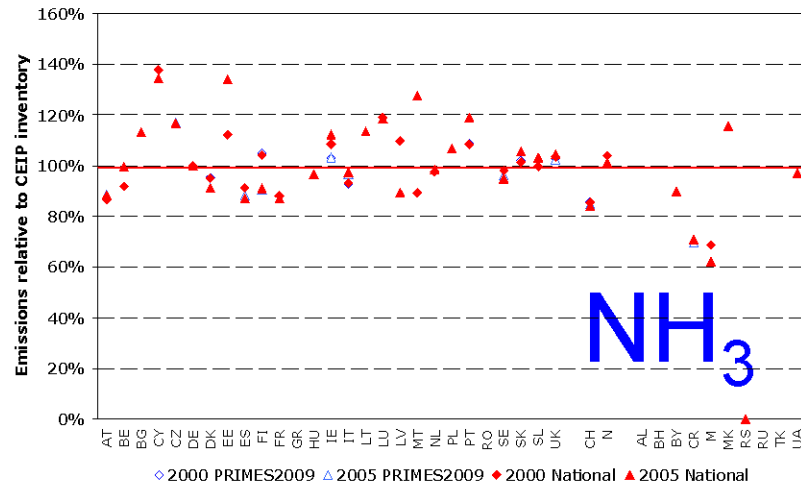
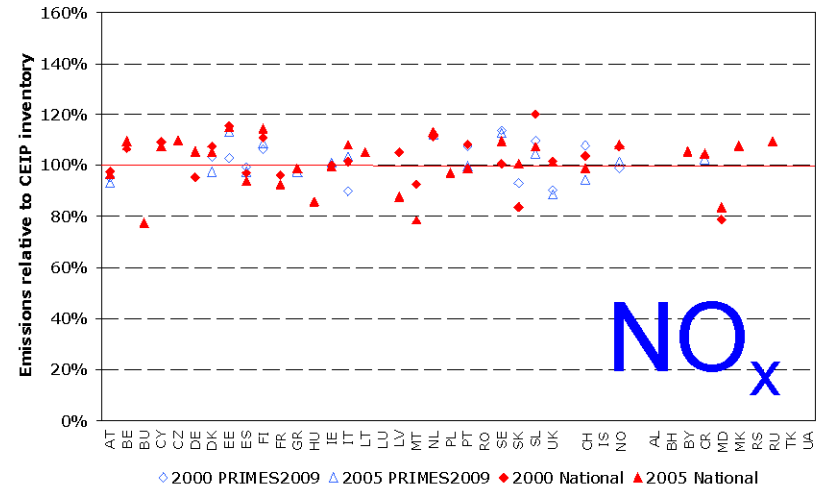
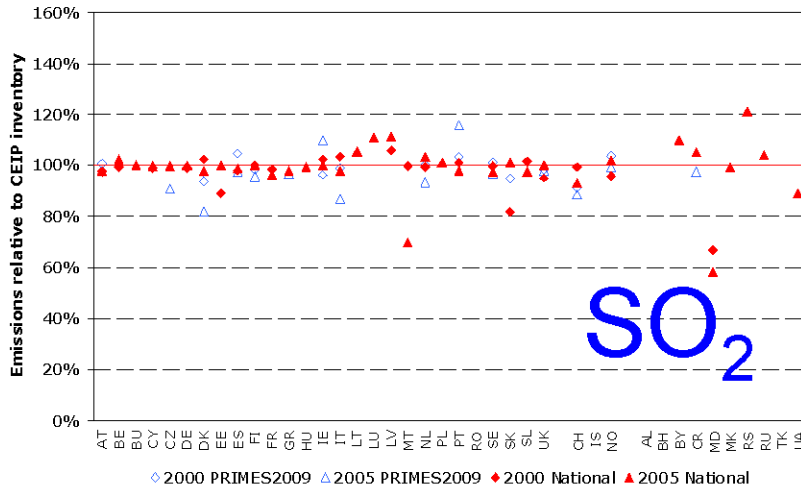
- Abatement potential & costs in GAINS seem to be conservative: no premature scrapping, insulation of houses, life style changes, new technologies, economic feedbacks
- GAINS not ready yet for 2050 scenarios
- To be prepared for surprises: distinguish different PM-components and include radiative forcing.
- More sensitivity analysis, sensitivity analysis, sensitivity analysis
...

Emission estimates for 2000 and 2005

GAINS estimates (draft) vs. CEIP Aug2009 inventory

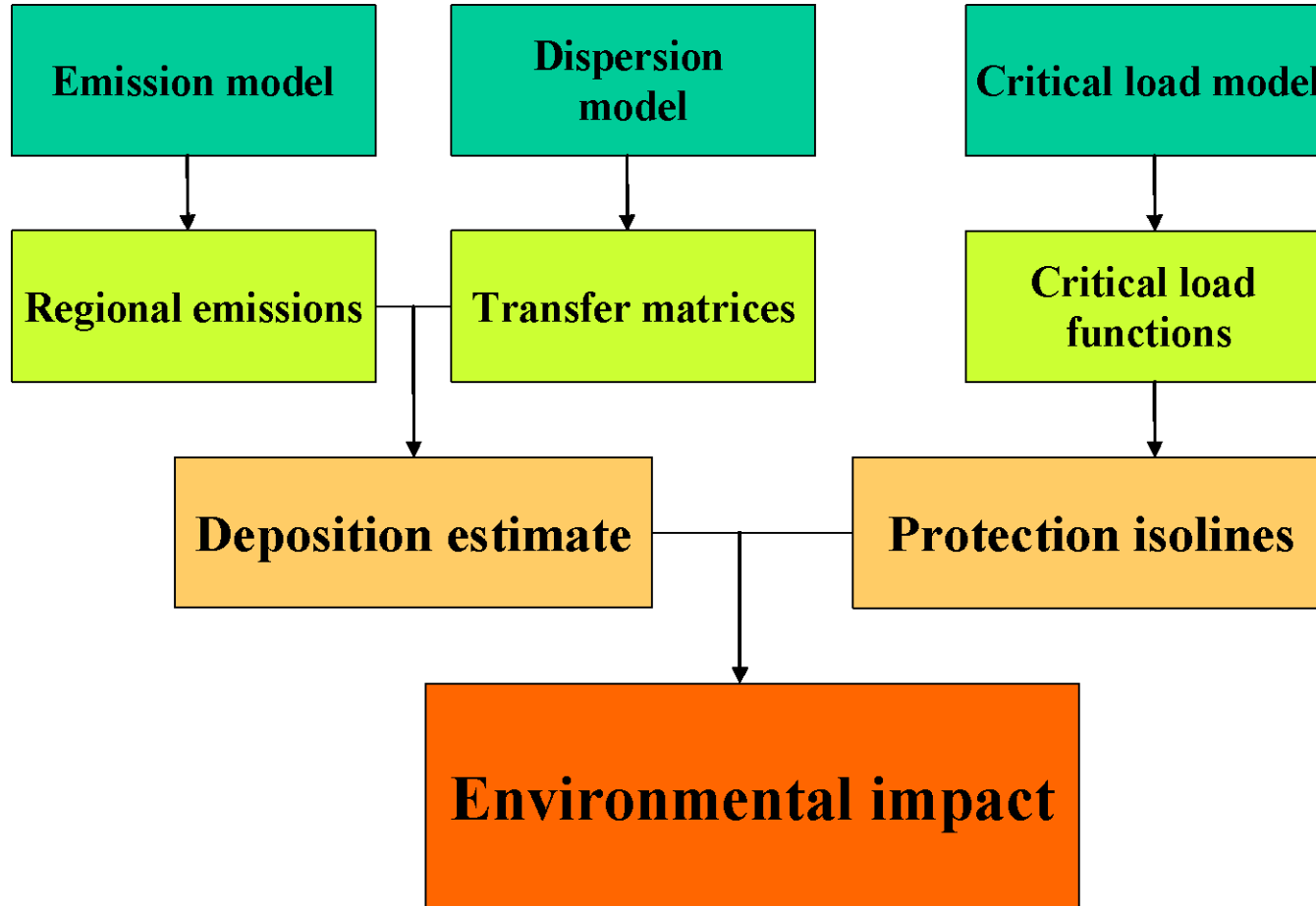
PROVISIONAL RESULTS

<http://gains.iiasa.ac.at>



Uncertainty Analysis Through Error propagation

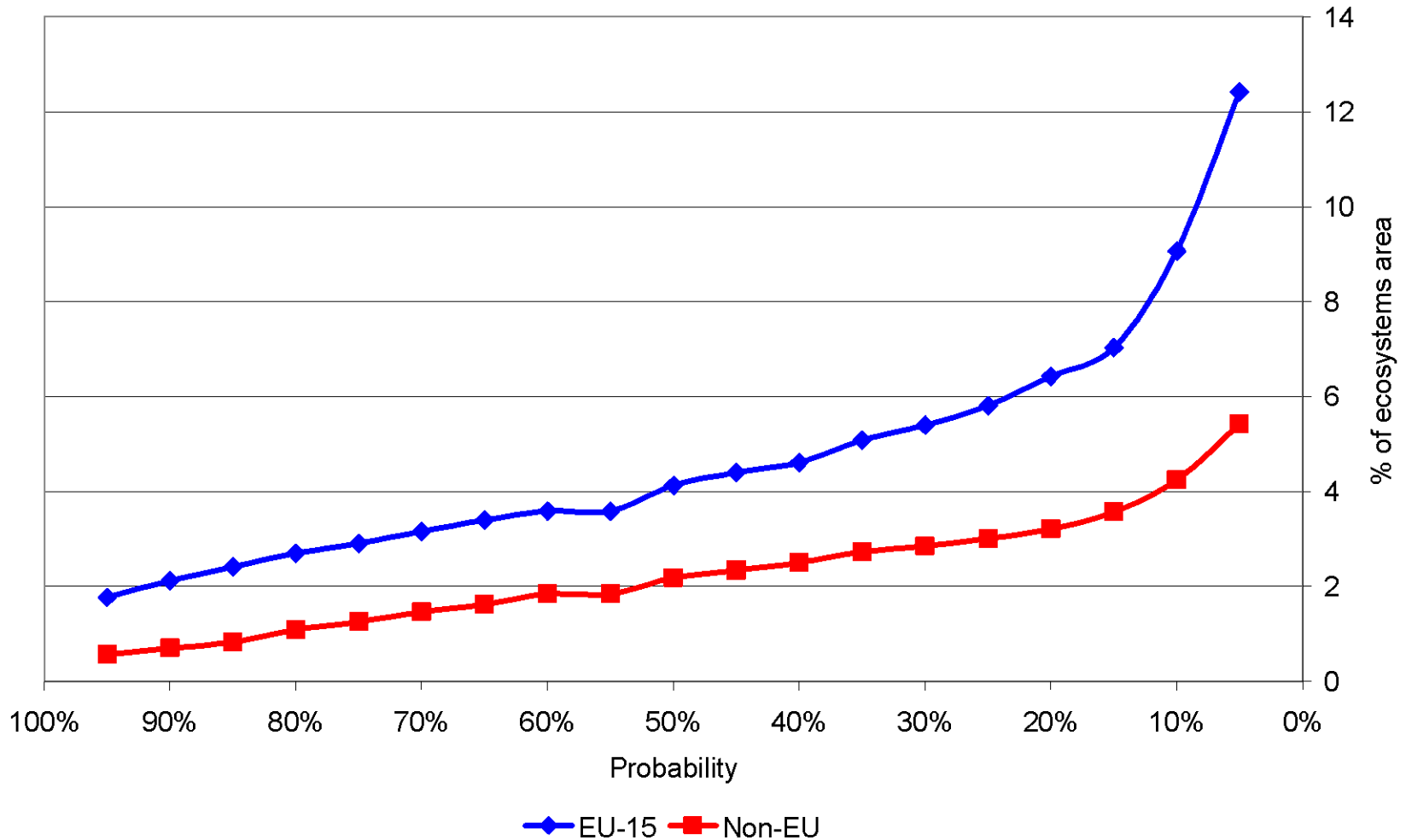
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Probability of Unprotected Ecosystems

Area in 2010

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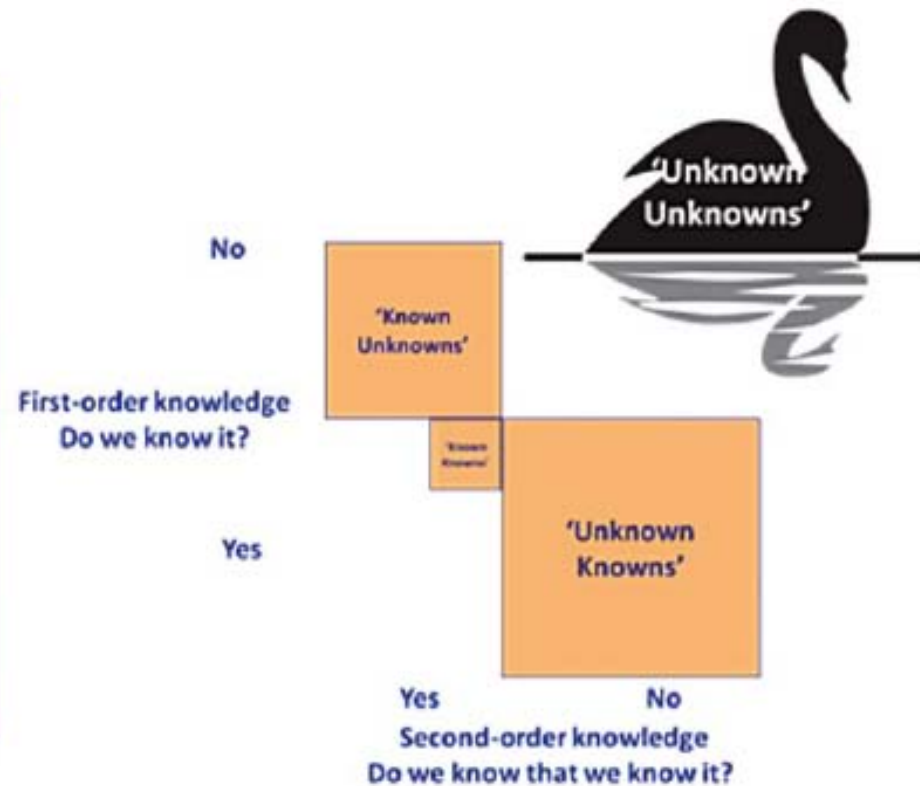
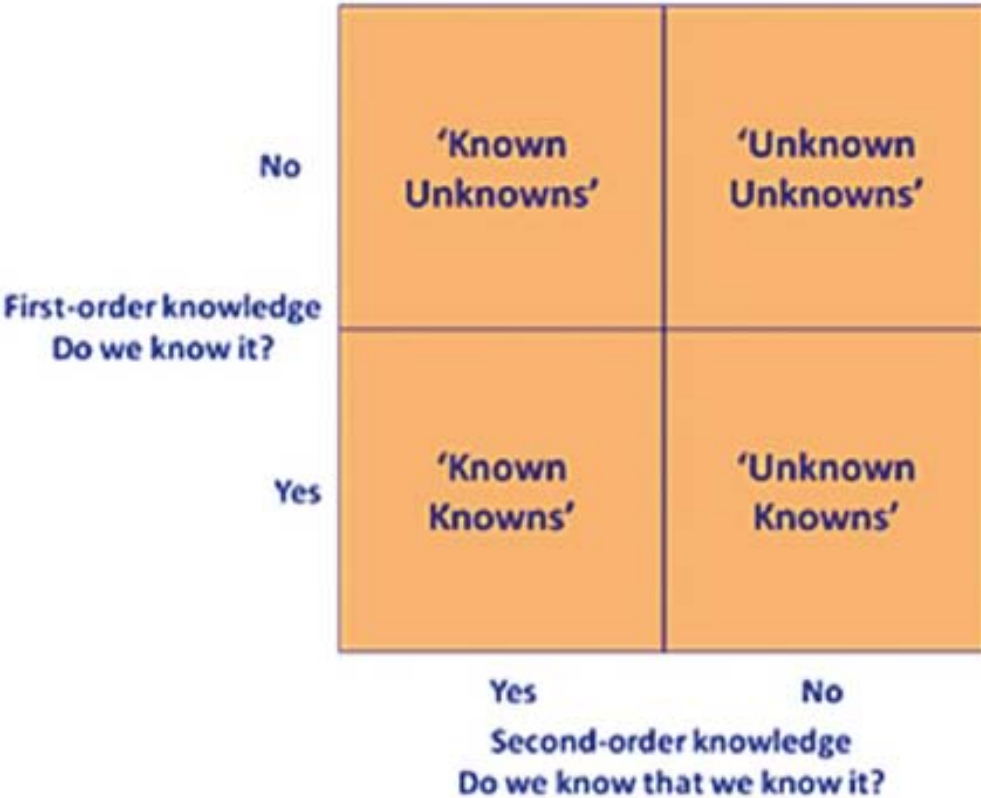
Uncertainty management

Robust policy advice → *How sensitive for systematic biases?*

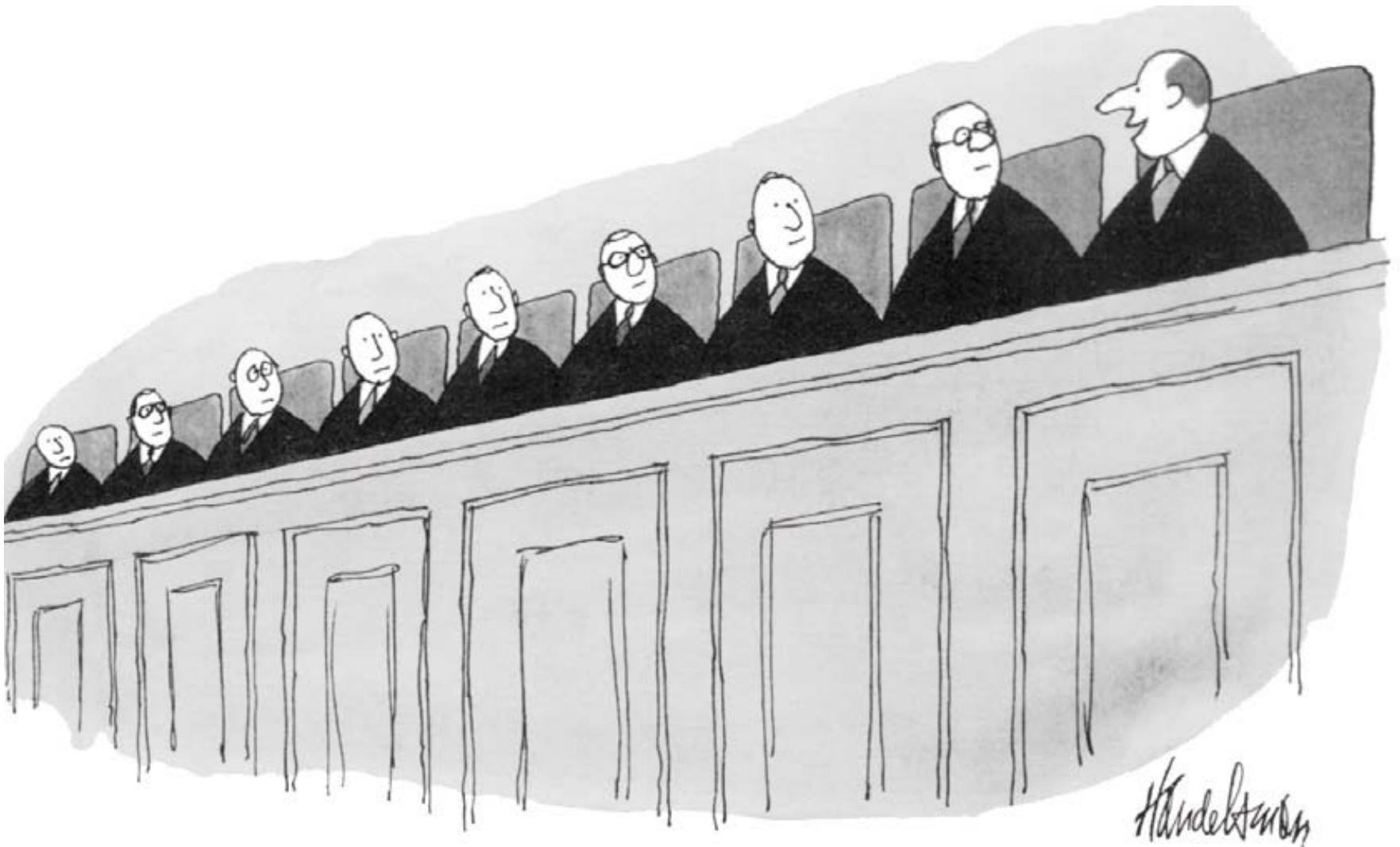
- **Data imperfections – systematic errors?**
 - Missing emission sources; real life (vehicle) emission factors; age capital stock, ...
- **Model simplifications**
 - Technological progress, behavior, ...
 - Economic effects of environmental policy
 - Climate change; Increasing background ozone
 - Spatial resolution of sources and receptors
- **Incomplete scientific understanding**
 - Gap between modelled and measured PM
 - Nitrogen deposition rates forests
 - Health effects of PM-species
 - Role of Nitrogen & ozone in carbon removal vegetation
- **The Future**
 - Oil prices, activity growth, decoupling, energy security policy, ..
 - Implementation of energy, transport & agricultural policies

Rumsfeldian uncertainty matrix

ideal (left) - reality (right)



Group think



Handelmann

"Well, heck! If all you smart cookies agree, who am I to dissent?"

Practical questions

1. What sensitivity analyses are crucial?
2. How to communicate uncertainties?