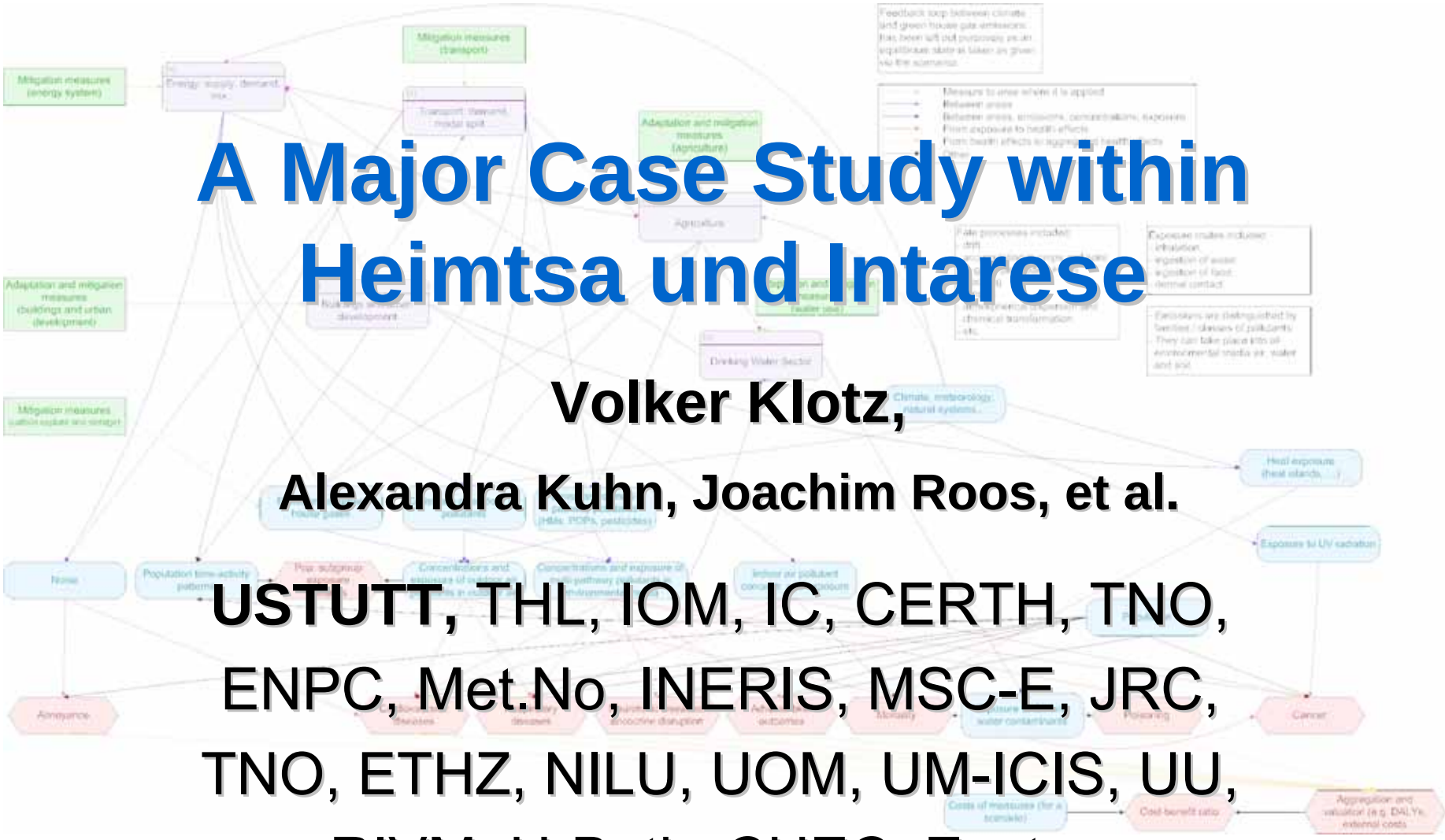

A Major Case Study within Heimtsa und Intarese

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USTUTT, THL, IOM, IC, CERTH, TNO, ENPC, Met.No, INERIS, MSC-E, JRC, TNO, ETHZ, NILU, UOM, UM-ICIS, UU, RIVM, U-Bath, CUEC, Exeter,

Case Study Overview

- Aim: to assess environmental health impacts of high-level, cross-cutting policy issues at EU level
- Provide a full example of an integrated environmental health impact assessment according to INTARESE recommendations

The problem

Policies and measures for mitigation of and adaption to climate change are nearly always chosen with only a few criteria:

- reduction of CO2eq. emissions (mitigation)
- reduction of climate change impacts (adaption)
- costs and distribution of costs (who pays how much)

However side benefits or side detriments might be relevant for the decision process (especially secondary environmental health impacts)

- Examples: production and burning of biomass instead of coal and gas for electricity production, lower air exchange rate indoors, wood stoves indoors…

Question of the Intarese/Heimtsa case study

What is the (negative or positive) impact of

a) EU mitigation options (policies and resulting measures) to reduce greenhouse gas emissions

b) EU adaptation options (policies and resulting measures) to reduce impacts of climate change

on human health?

Compare a scenario with **no further attempt to mitigate GHG emissions** with a scenario with **an average worldwide temperature increase of 2°** for the years 2010, 2020, 2030, and 2050.

Tiered approach

- Tier 1: Scoping and screening
  Identify and map out the pathways, from policies and measures through to (aggregated) health impacts

- Tier 2: Identify pathways and aspects of pathways that matter most; focus on improving analysis of these.
  Detailed integrated environmental health impact assessment. Make use of the toolbox.

The Model: Online Computer Tool for Calculating Damages According to the IPA

http://EcoSenseWeb.ier.uni-stuttgart.de

EcoSenseWeb

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OVERVIEW | STRUCTURE | EXAMPLE | I/O DATA | HOW TO GET

OVERVIEW

EcoSenseWeb is an integrated atmospheric dispersion and exposure assessment model which implements the Impact Pathway Approach developed within ExternE . It was designed for the analysis of single point sources (electricity and heat production) in Europe but it can also be used for analysis of multi emission sources in certain regions. EcoSense was developed to support the assessment of priority impacts resulting from the exposure to airborne pollutants, namely impacts on human health, crops, building materials and ecosystems. The current version of EcoSenseWeb, covers the emission of 'classical' pollutants SO2, NOx, primary particulates, NMVOC, NH3, as well as some of the most important heavy metals. It includes also damage assessment due to emission of greenhouse gases. Impacts of 'classical' pollutants are calculated on different spatial scales, i.e. local (50 km around the emission source), regional (Europe-wide) and (northern) hemispheric scale.
The version EcoSenseWeb has a web-based user interface and was developed within the European Commission projects NEEDS and CASES.

The EcoSenseWeb and the calculation of external costs follow as far as possible the so called Impact Pathway Approach (IPA). The IPA, a bottom-up approach, is depicted in Figure 1. The IPA starts with the emission of a pollutant at the location of the source into the environment; models its dispersion and chemical transformation in the different environmental media; identifies the exposure of the receptors and calculates the related impacts which then are aggregated to external costs.

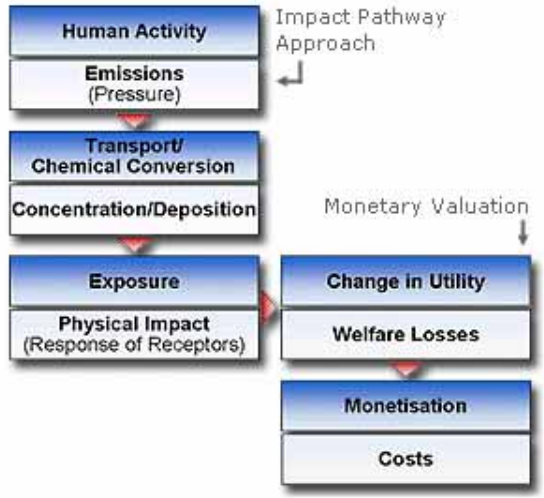

Fig. 1: Impact Pathway Approach.

Scoping and Screening process

- Scenario development
- First stakeholder involvement in the integrated environmental health impact assessment
- Screening results indicate
  - Health impacts of quite a number of climate change mitigation policies and adaptation measures (e.g. energy efficiency in the transport and housing sectors) are as important as the climate change effects.
  - Some policies, e.g. biomass burning might cause quite high additional health impacts.

Examples of screening results

- Example measures: Energy (mDALYs / t CO_2 avoided):
  - Larger share of renewables: -0.68 (reduction of impacts)
  - More combined heat and power: -1.23

- Example measures: Transport (mDALYs / t CO_2 avoided):
  - Electric vehicles (30% of new cars in 2030): -0.2

Thanks!!!

For further informations you could contact:

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