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ECLAIRE Component 5

Integrated Risk Assessment and Policy Tool

ÉCLAIRE Kick-off meeting
Brescia, October 24-26, 2011



C5: Why and what?



Overall objective:

- Make findings of ECLAIRE relevant for (today's?) response strategies

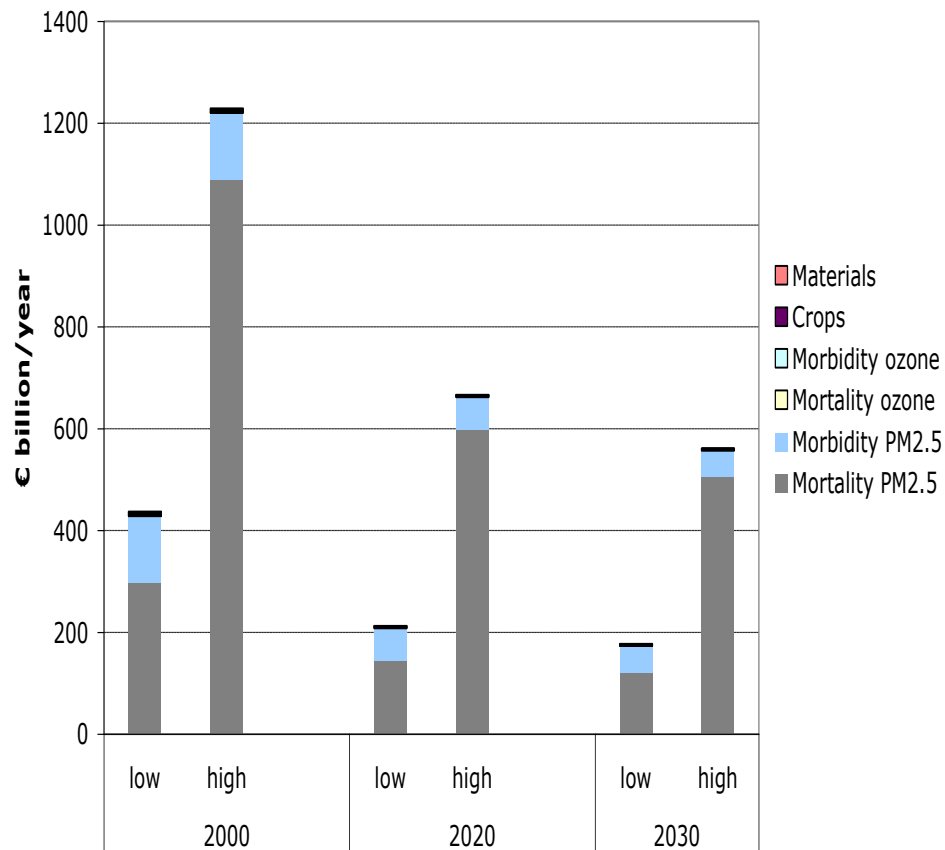
Tasks:

- Quantifications of economic benefits of ecosystems (WP18)
- Integration of climate change effects into impact assessment (WP19)
- Implications of/for mitigation and adaptation strategies (WP20)

Quantifications of economic benefits of ecosystems (WP18)



Damage costs of air pollution in the EU-27

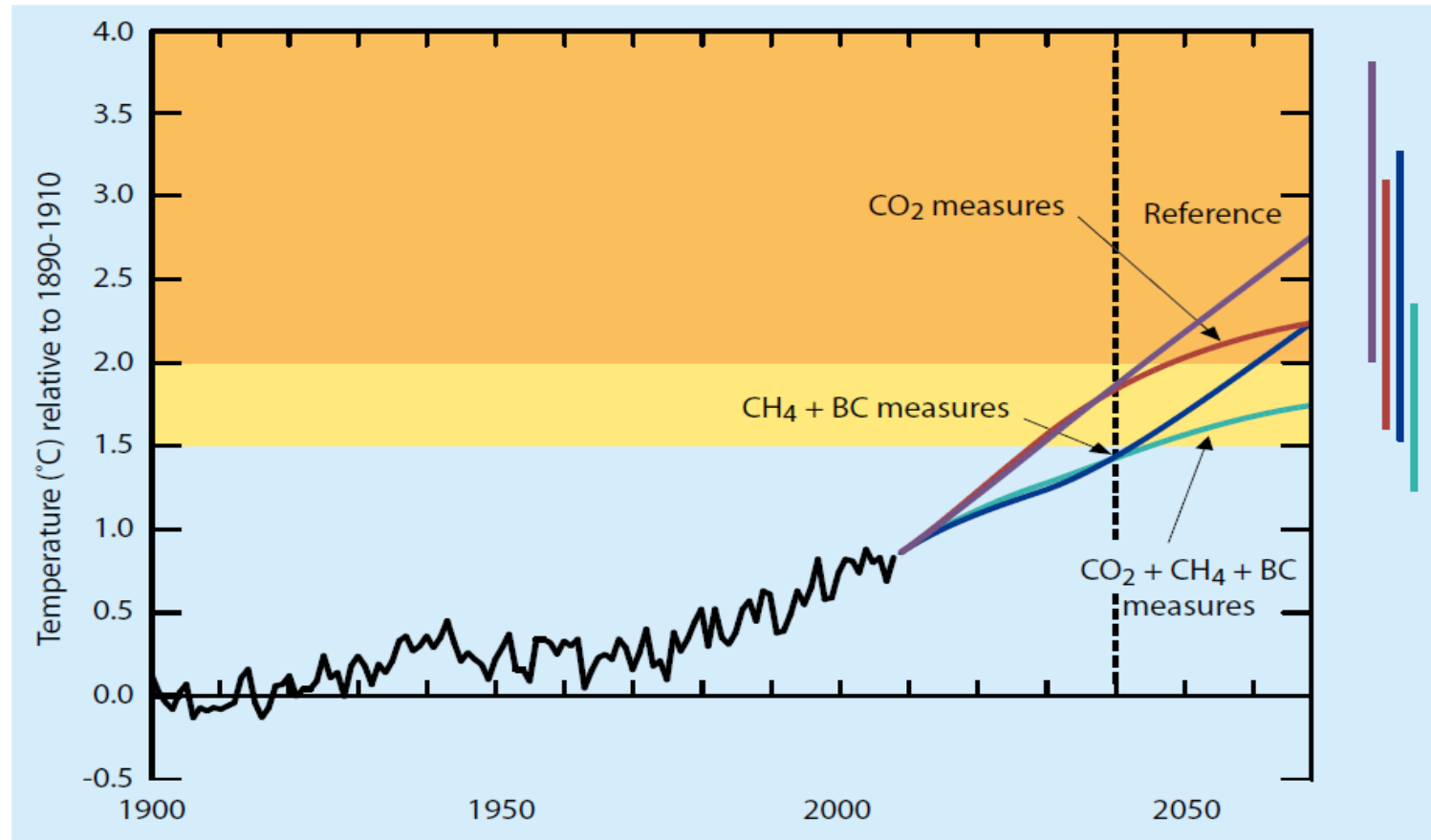


Source: EC4MACS

- Current methodologies for quantifying ecosystems value are incomplete
- ECLAIRE: New approach to value economic impacts and valuation of ecosystems services:
 - provisioning services,
 - regulating services,
 - supporting services
 - cultural services.
- For timber, meat, milk production, carbon sequestration, non-CO2 GHG

Integration of climate change effects into impact assessment (WP19)

Global mean temperature relative to 1890-1910

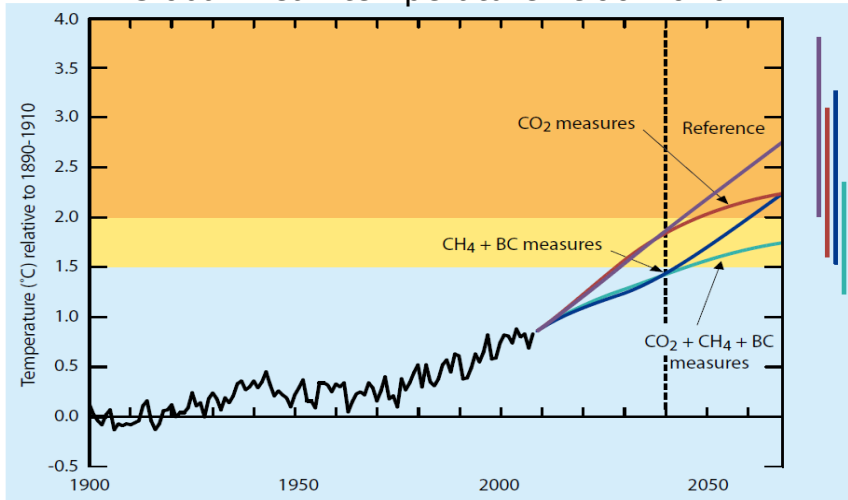


Source: UNEP Black Carbon Assessment 2011

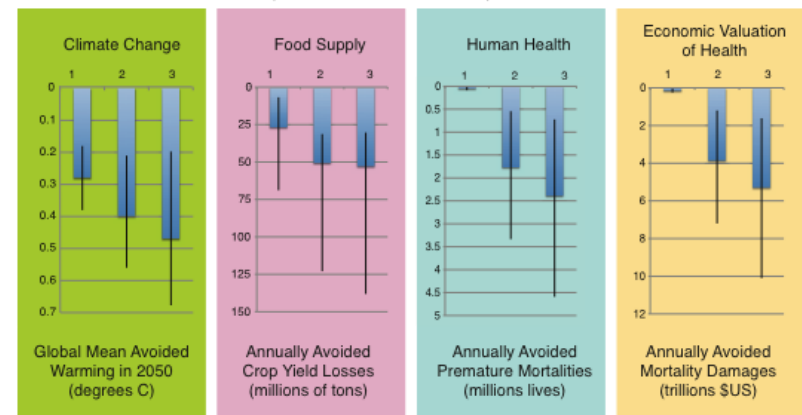
Integration of climate change effects into impact assessment (WP19)



Global mean temperature 1900-2070



Global Impacts of Additional Emissions Controls on Methane and Products of Incomplete Combustion
1: Methane measures, 2: 1+BC technical measures, 3: 2+Non-technical measures



Source: UNEP Black Carbon Assessment 2011

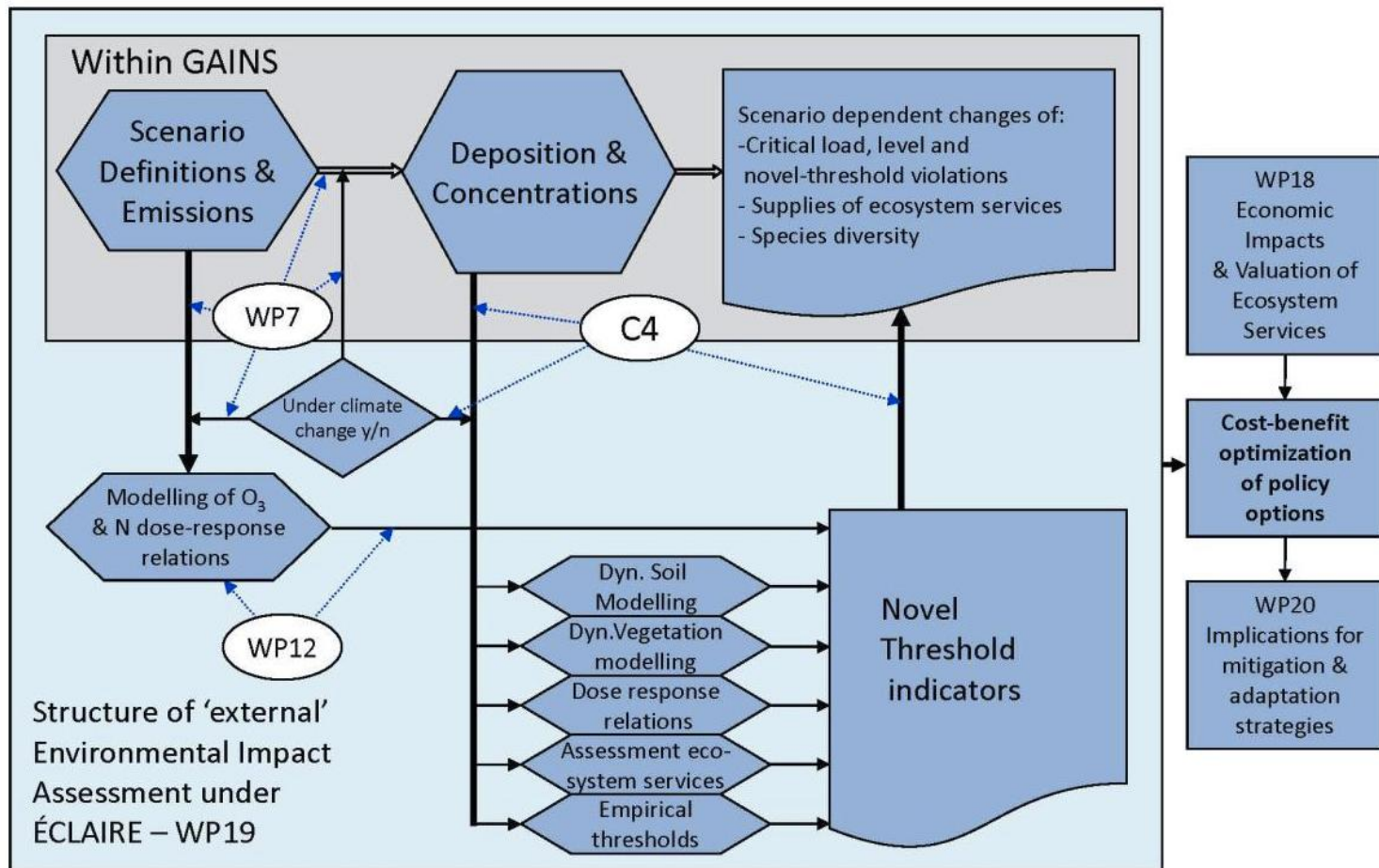
ECLAIRE: Novel impact metrics from:

- dynamic soil and soil-vegetation models,
- dose-response relationships,
- ecosystem services estimates,
- empirical thresholds from field experiments

C5 will:

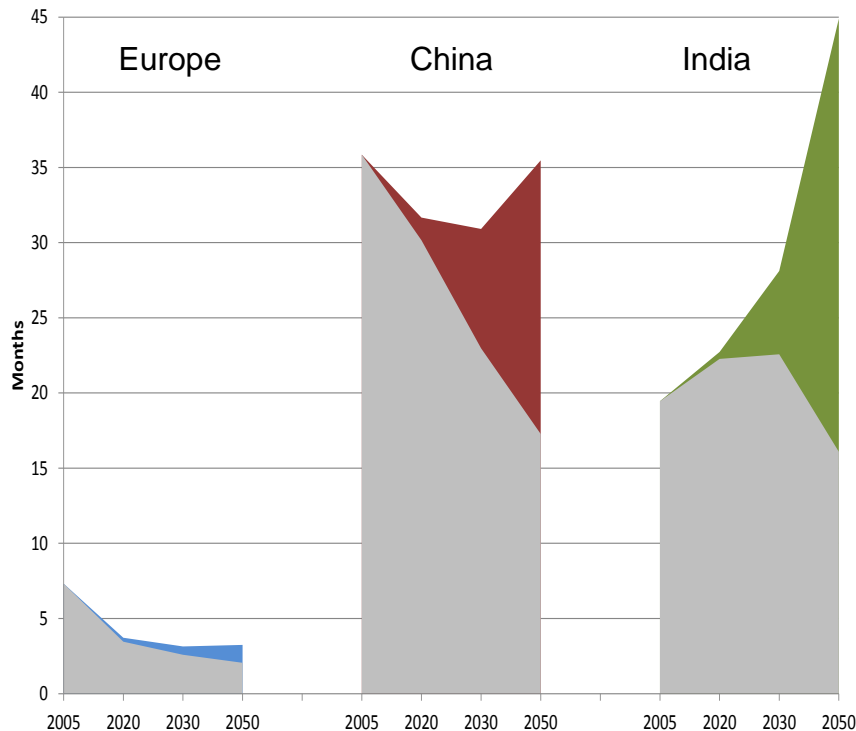
- Incorporate these new indicators into or link them with the GAINS model
- Assess uncertainties and develop robust conclusions

Information flow for scenario assessment



Implications of/for mitigation and adaptation strategies (WP20)

Loss of statistical life expectancy attributable
to PM2.5
Baseline vs. 2-degree scenario



(Source: POLES/GAINS)

ECLAIRE will:

- Extend time scale of analysis from 2030 to 2050 (2100)
- For different scenarios of climate change and emission controls:
 - What are impacts on ecosystems?
 - How much more/less would it cost to maintain protection of ecosystems?
- Role of adaptation?

Key deliverables



- Description of data for quantifying and valuating ecosystem effects
- Implementation of new effect indicators and critical thresholds in the GAINS modelling system
- Cost optimization of emission abatement and cost-benefit analysis of pollution abatement
- Policy recommendations regarding ecosystem protection under conditions of climate change
- Critical uncertainty for C5: timely delivery of input from other WPs