COACCH: Facts and figures

✓ COACCH CO-designing the Assessment of Climate Change costs
✓ Starting date: 01.12.2017
✓ Duration: 48 months
✓ 13: Partners; 7 EU countries
✓ 18: Models
✓ 44: Deliverables; 18: Milestones
✓ > 40: Stakeholders
✓ 2 open-source tools with > 10 datasets
This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 776479
Co-design

✓ Co-design approach used to improve policy relevance
✓ Shape research programme and collaborate with end-users of research
✓ 40 stakeholders – European, national, local – Policy, Business, Research
✓ Using a targeted co-creation process through the project
✓ Included deep engagement with smaller group

![Diagram showing the cycle of Co-design, Co-production, Co-delivery, and Evaluation]

![Bar chart showing interest levels from stakeholders and number of research topics]

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Modelling framework

Emissions, Climate Model, SSP sampling

Table 1: Selected scenario combinations to be used in the COACCH project

<table>
<thead>
<tr>
<th>SSP1 (Green Growth)</th>
<th>SSP2 (Middle of the road)</th>
<th>SSP3 (Regional rivalry)</th>
<th>SSP4 (Inequality)</th>
<th>SSP5 (Fossil fuel development)</th>
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<tbody>
<tr>
<td>RCP8.5</td>
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<td>RCP2.6</td>
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* = "low signal" climate model; ○ = "average" climate model; ● = "high signal" climate model; □ = fixed adaptation, "average" climate model

* The "low signal" and "high signal" climate model refers to, respectively, choosing a model which leads to relatively low/high temperature change and/or low/high precipitation changes.

Impact areas

- Agriculture
- Forestry
- Fishery
- Transportation
- Sea-level rise
- River Floods
- Energy Supply
- Labour Productivity
- Ecosystems
- Health
- Energy Demand
- All together

Economy and society

Vertical and horizontal modelling integration, including impact uncertainty

Existing peer review modelling suite
Used harmonised scenarios, planned integration of models and WPs
Coverage improving – still some gaps (ecosystem services) – difficult to mix quant and qual. when focus on economics
Adaptation

✓ Sectoral modelling of ‘technical’ adaptation, costs and benefits
✓ Analysis of adaptation benefits for public finances
✓ Analysis of ‘early’ low and no regret options

Modelling of real world adaptation still challenging – complementary top down and bottom up is useful

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Global level

- New reduced-form climate change damage impact functions - 3 global IAMs
- Applied to provide insights – economic costs of climate change - mitigation
COACCH: Aims, scope, outcomes

✓ Analysis of selected climate & socio-economic tipping points associated to «high damages»

![Image of map with climate & socio-economic tipping points]

Figure 2. Typology of tipping points (TPs).

![Image of diagram showing the impact from climate change and transformational response to climate change]

Figure 3. Diagrammatic representation of climate change, adaptation and mitigation showing the position of tipping points (TPs) (system blocks freely after Bailer 2013), following (IPCC-AR5) Arrows indicate the archetypal cause-effect chain from increasing greenhouse concentrations (left-top) which change the climate system (left-middle) and the state of ecosystems (left-bottom). Biophysical changes in turn have an impact on the socio-economic system (right-bottom) and evoke a response of human actors (right-top) who may try to counter climate change (mitigation-arrow) or prevent it from having an impact (adaptation-arrow).
Key Messages - Results

- High economic costs of climate change in Europe, even for central scenarios
- Strong distributional pattern of economic costs across Europe (and across World)
- Ambitious global mitigation policy reduces these costs. New estimates show Paris passes a cost-benefit test
- Climate and socio-economic tipping points would have major economic consequences for Europe, and add weight to need for mitigation
- But even if Paris Goals are achieved, high economic costs in the next two decades are locked-in, and can only be reduced with adaptation
- Adaptation can dramatically reduce the economic costs of climate change. However, does not negate the need for ambitious mitigation
- Many early adaptation investments deliver high benefit to cost ratios, i.e. are no or low-regret in nature, and a priority for early plans
- Adaptation reduces the negative impacts of climate change with net positive outcomes for public budgets, due to the benefits on government revenues.
Uncertainty

Detailed uncertainty analysis undertaken
New ways to communicate, identify what matters

But still challenging to communicate and present
(policy makers like single, central numbers!)

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Enhancing Policy uptake and Impact

✓ Series of policy briefs as project progressed

✓ Case studies linked to policy outputs with key stakeholders

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Other COACCH outputs

✓ Policy briefs – communicating results to wider audience

✓ Scenario explorer – tested with stakeholders
✓ On-line «user friendly» explorer of project results where also a «non-expert» can navigate through project outcomes

✓ COACCH database
✓ Open access database of all project results

✓ Co-design guidance
Co-design lessons - bounded (focused on use of results)

- High benefits, improves relevance, and improves uptake and use of results
- But also involves higher costs (In COACCH, 10% of the project budget)
- Enhanced by knowledge brokers, to drive process, clear objectives & roles
- Helped by joint products, deeper engagement & case study
- But more difficult in fixed Horizon Projects, especially modelling projects – some opportunities to include more flexibility, potential to do co-design earlier (RTD)
Modelling insights

- Major advance in integrated and harmonised analysis – linkage between teams and models
- Multi-model testing and impact and economic uncertainty (not just scenarios) – provides insights – but also needs new ways to communicate and explain
- Greater spatial disaggregation achieved
- Quant. and qualitative assessment still largely separate (combining well is elusive)
- Greater focus on open source results and rapid assessment tools – less so underlying models
- Focus on key policy questions – and co-design process – improves impact (understand needs, help understand how want information presented)
COACCH who we are

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