

Knowledge Synthesis and Gap Analysis on Climate Impact Analysis, Economic Costs and Scenarios

Deliverable of the H2020 COACCH project

Publication

Report

Citation

Tröltzsch, J., et al. (2018). D1.2 Knowledge synthesis and gap analysis on climate impact analysis, economic costs and scenarios. Deliverable of the H2020 COACCH project.

This COACCH project report is a stock-take of the knowledge on the economic costs of climate impacts and policy challenges in Europe. It describes the status quo and gaps in the existing knowledge on impact analysis and economic costs for 13 sectors. It provides an overview of existing knowledge on climate and socio-economic tipping points. The report is available for download.

The objective of the COACCH project (CO-designing the Assessment of Climate CHange costs) is to produce an improved downscaled assessment of the risks and costs of climate change in Europe. The project is proactively involving stakeholders in co-design, co-production and co-dissemination, to produce research that is of direct use to end users from the research, business, investment and policy making communities.

The report summarizes the existing knowledge on the economic costs of climate change impacts in Europe and upcoming or ongoing policy challenges in different sectors. For each sector, studies from EU and national level were screened to gather information on impacts, including where these are important but have less coverage, climate costs reported, key gaps for cost assessments in this sector, research recommendations and existing policy challenges. The report covers models, economic cost estimates and policy challenges for 13 sectors: agriculture, forestry & fisheries, tourism, health, inland flooding & water management, coastal flooding, energy, transport, biodiversity, businesses & insurance. It focuses on the European level but also includes global and national information. It takes into account knowledge from past and ongoing EU projects as well as scientific articles. It includes a review on the state of the art of climate change, competitiveness and growth. Furthermore, it compiles existing knowledge on climate and socio-economic tipping points.

The most comprehensive coverage on economic assessments of climate costs are found for coastal zones and inland river flooding where comprehensive modeling approaches are already available. For agriculture, energy, forestry, fisheries, transport and tourism, there is some good coverage of cost estimates, but there are still some important gaps that need to be addressed. The coverage of climate cost assessments for business, industry, trade and insurances is limited and biodiversity and ecosystems are areas with a very low coverage on economic assessment of climate change.

The report provides an early framing of possible research topics for the COACCH project. The knowledge and gaps identified by this report also feed directly into the COACCH co-design process, where research questions are jointly defined with stakeholders from business, investment, research, non-governmental and policy making communities.

A synthesized version of the report (26 pages) can be downloaded here: <u>The Economic Cost of Climate Change in Europe - Synthesis Report on State of Knowledge and Key Research Gaps</u>.

Language

English

Authorship

Jenny Tröltzsch Katriona McGlade Philipp VoÃ[] John Tarpey Katrina Abhold

Paul Watkiss, Alistair Hunt, Federica Cimato, Michelle Watkiss (PWA)

Ad Jeuken, Kees van Ginkel, Laurens Bouwer, Marjolijn Haasnoot (Deltares)

Andries Hof, Detlef van Vuuren (PBL)

Daniel Lincke, Jochen Hinkel (GCF)

Franceso Bosello, Enrica De Cian, Enrico Scoccimaro (CMCC)

Esther Boere, Petr Havlik, Reinhard Mechler, Miroslav Batka, Dmitry Schepaschenko, Anatoly Shvidenko, Oskar Franklin (IIASA)

Nina Knittel, Birgit Bednar-Friedl, Stefan Borsky, Karl Steininger, Gabriel Bachner (Uni Graz)

Benjamin Leon Bodirsky (PIK)

Onno Kuik, Predrag Ignjacevic, Max Tesselaar (VU)

Jessie Ruth Granadillos (Climate Analytics)

Milan Šcasný, Voitech Máca (CUNI)

Funding

European Commission, <u>Directorate-General Research & Innovation</u> (DG Research & Innovation), International

Year

2018

Dimension

116 pp.

Project

CO-designing the Assessment of Climate Change Costs (COACCH)

Project ID

2811

Table of contents

- 1. Introduction and Methodology
- 2. Climate change projections
- 2.1 State of the art

- 2.2 Climate projections for Europe
- 2.3 Summary
- 3. Socio-economic scenarios
- 3.1 State of the art
- 3.2 Sectoral and regional extension of the SSPs
- 3.3 Summary
- 4. Economic costs estimates and policy challenges
- 4.1 Agriculture
- 4.2 Forestry and Fisheries
- 4.3 Flooding and Water Management Risk
- 4.3.1 Flooding
- 4.3.2 Water supply and management risks
- 4.4 Coastal flooding
- 4.5 Energy
- 4.6 Transport
- 4.7 Health
- 4.8 Tourism
- 4.9 Biodiversity
- 4.10 Business, Industry and Trade, including Insurance sector
- 5. Macroeconomic, growth and competitiveness
- 6. Tipping points
- 6.1 Biophysical tipping points
- 6.2 Socio-economic tipping points
- 6.3 Key gaps
- 7. Conclusions
- 8. References
- 9. Annex 1: Comparison of the main elements of crop models

Keywords

Adaptation Climate

economic modelling, scenarios, socio-economic assessment, climate risks, costs of climate change

Source URL: https://www.ecologic.eu/16348