Project partners

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- Fundacao da Faculdade de Ciencias da Universidade de Lisboa, Portugal (FFCUL)
- Foundation for Applied Information Technology in Environment, Agriculture and Global Changes, Romania (TIAMASG)
- Stockholm Environment Institute, Sweden (SEI)
- University of Kassel, Germany (UNI KASSEL)
- Wageningen University, The Netherlands (WU)
- Joan David Tàbara Villalba, Catalonia, Spain (JDT)
- Scula Superiore Sant'Anna di Studi Universitari e di Perfezionamento, Pisa, Italy (SSSA)
- Dutch Research Institute For Transitions, Erasmus University Rotterdam, The Netherlands (DRIFT)
- Danmarks Meteorologiske Institut, Denmark (DMI)
- Central European University, Hungary (CEU)
- Pensoft Publishers Ltd, Bulgaria (PENSOFT)
- London School of Hygiene & Tropical Medicine, UK (LSHTM)
- Swiss Federal Institute of Technology Zürich, Switzerland (ETHZ)
- University of Paris 1, Centre National de la Recherche Scientifique, France (CNRS)
- Cranfield University, UK (CU)
- Potsdam Institute for Climate Impacts Research, Germany (PIK)
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- University of Edinburgh, UK (UEDIN)
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- Paris Lodron University Salzburg, Austria (PLUS)

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IMPRESSIONS

Keywords: Climate change, Impacts, Vulnerability, Adaptation, Mitigation, High-end climate scenarios, Extreme socio-economic scenarios, Cross-sectoral, Uncertainty, Stakeholder engagement, Decision support

Consortium of 24 partners from 16 countries
Structure: 7 work packages (WPs)
Duration: November 2013 – October 2018.

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IMPRESSIONS

IMPACTS AND RISKS FROM HIGH-END SCENARIOS: STRATEGIES FOR INNOVATIVE SOLUTIONS

Background

There is widespread acceptance that the climate is changing. Although the United Nations Framework Convention on Climate Change recognised that increases in global temperature should be below 2°C to avoid severe impacts, current emission trends suggest that limiting warming to the 2°C target will be difficult. Indeed, without significant reductions in emissions, projections point to much more substantial warming.

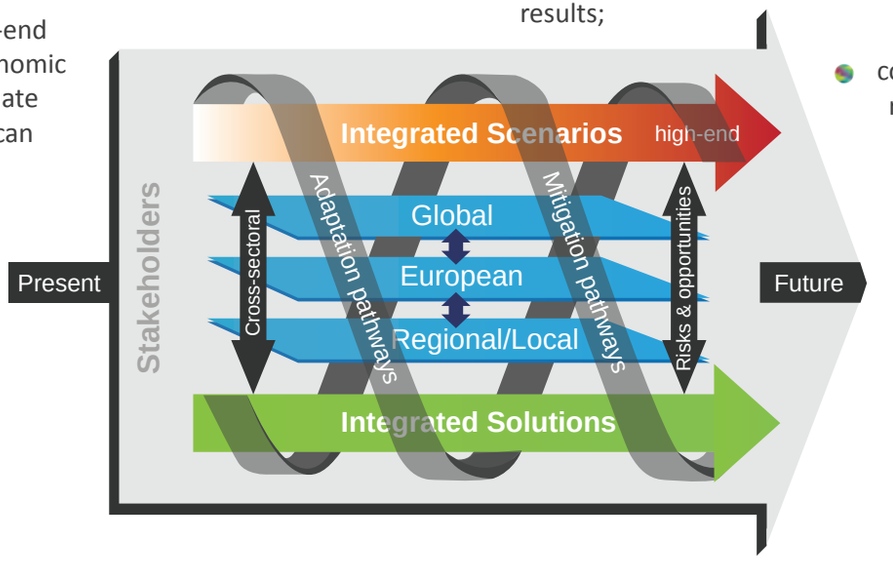
Despite the increasing plausibility of these high-end scenarios, there are few studies that assess their potential impacts, the ability of adaptation options to reduce vulnerabilities, and the potential synergies and trade-offs between adaptation and mitigation.
Thus, it is vital that decision-makers have access to reliable scientific information on these uncertain, but potentially high-risk, scenarios of the future to inform adaptation planning.

General aim

IMPRESSIONS aims to advance understanding of the consequences of high-end climate and socio-economic scenarios and to evaluate how such knowledge can be embedded within effective and integrated adaptation and mitigation decision-making processes.

IMPRESSIONS will

- work with decision-makers to better understand their knowledge needs and maximise their active participation in the research;
- develop a novel stakeholder-driven methodology for the creation of an integrated set of high-end climate and more extreme socio-economic scenarios;
- apply these scenarios to a wide range of existing and new spatially-explicit models of impacts and adaptation in five case studies covering global, European and regional/local (Scotland, Iberia and Hungary) scales;
- embed the impacts modelling work within an integrated assessment approach which advances the analysis of multi-scale and cross-sectoral synergies and trade-offs;
- evaluate the time- and path-dependency of adaptation and mitigation options taking account of the non-linearity, complexity and tipping points described in the scenarios and impact model results;
- communicate the results to a broad community of stakeholders to enhance current approaches to climate change policies and actions;



Main outcomes

- A more thorough understanding of decision-makers' needs for increasing the robustness of decisions in response to high-end climate change scenarios.
- A set of integrated high-end climate and more extreme socio-economic scenarios covering global, European and regional/local scales.
- Improved quantification and mapping of cross-sectoral impacts, risks and vulnerabilities associated with high-end scenarios along with consideration of their uncertainties.
- Advances in how adaptation is modelled by incorporating a more comprehensive representation of associated constraints, triggers, time lags and consequences.
- New models which simulate adaptation as a process by representing the behaviour of decision-makers, firms and institutions as learning and interacting agents.
- Assessment of the robustness of current policies and the need for transformative strategies to deal with high-end scenarios.
- A set of sustainable development transition pathways that offer options for harmonising adaptation and mitigation strategies to enable society to adapt effectively to potential impacts under high-end scenarios and across multiple scales.
- A knowledge network and information hub to support mutual learning and enhance decision-makers' capacity to take up the project's recommendations.