



TOMACE

Trade-offs between mitigation and climate engineering: an interdisciplinary approach

- [Prof. Dr. Katrin Rehdanz](#) // Kiel University
- [Prof. Dr. Andreas Ernst](#) // University of Kassel
- [Prof. Dr. Konrad Ott](#) // Kiel University
- [Dr. Christine Merk](#) // Kiel Institute for the World Economy
- [Julia Pohlert](#) // Kiel University
- [Geraldine Klaus](#) // University of Kassel

Summary

The project Trade-offs between mitigation and climate engineering: an interdisciplinary approach (TOMACE) contributes to the hitherto expert-dominated climate-engineering (CE) debate by conducting detailed analyses of lay persons' acceptance of solar radiation management (SRM) and the effects of SRM on people's willingness to mitigate greenhouse gas emissions. TOMACE looks at how and why people choose a portfolio of mitigation and SRM options for fighting climate change that involves making trade-offs between the options. The trade-off decisions are especially relevant as they require a weighing-up of the risks of climate change against the risks of SRM. The profound uncertainties and the moral judgements involved make the responses particularly interesting. Our hypothesis is that a) the weighing of costs and benefits, b) the significance persons

attribute to ethical arguments, c) lifestyles and d) self-image and identity determine the acceptance of SRM and the trade-off decisions between mitigation and SRM. The project thus provides important insights for policymakers about the acceptance of SRM and its influence on the climate policy portfolio.



KEY QUESTIONS

- **How do framings, identity, ethical arguments and lifestyles influence lay persons' perceptions and trade-off decisions?**
- **How do lay persons perceive the arguments for and against SRM?**
- **Which cognitive and motivational processes drive the judgement and acceptance of SRM?**
- **What are the commonalities and differences between the results from the different methodological approaches?**

Methods

TOMACE brings together the disciplines environmental and behavioral economics, environmental ethics, and environmental psychology. Lay persons' perceptions will be analyzed using these quantitative and qualitative methods:

- Psychological surveys and experiments
- Choice experiments
- Framed-field experiments
- Citizens' jury

These different disciplinary approaches will be closely connected to each other by the use of common scenarios developed at the beginning of the project.

Role of the project within the SPP

The project TOMACE contributes to the hitherto expert-dominated climate-engineering (CE) debate by conducting detailed analyses of lay persons' acceptance of solar radiation management (SRM). The project provides information about how and why people choose a portfolio of mitigation and SRM options for fighting climate change that involves making trade-offs

between the options. TOMACE collaborates with other SPP projects on scenario development.