

THE POLITICAL ECONOMY OF GREEN DEVELOPMENT

REFRAMING RISK AND UNCERTAINTY IN THE ECONOMICS OF CLIMATE ADAPTATION

REINHARD MECHLER¹; KEITH WILLIGES².

1. VIENNA UNIVERSITY OF ECONOMICS AND BUSINESS, VIENNA - AUSTRIA;

2. IIASAA, LAXENBURG - AUSTRIA.

Abstract:

Uncertainty and risk have become buzzwords in research on climate change mitigation and adaptation. Mitigation analyses have embraced the concept of uncertainty and are being operationalized around stochastic estimates of uncertain climate sensitivity leading to probabilistic scenarios of warming. The concept of risk in research on climate change is nothing new and already in the 1990s integrated risk assessments to analyze global climate change have been proposed. Yet, only over the last few years, with the consequences of climate change becoming visible, have assessments of climate change impacts and vulnerability changed in focus from an initial analysis of the problem to the assessment of potential impacts, and finally, to the consideration of specific risk management methods.

Very recently such framing has prominently gained traction with the publication of IPCC's special report on "Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (SREX)." The suggested focus on risk-based assessments of adaptation is particularly important for fat-tailed (i.e., non-normally distributed) catastrophic impacts that are potentially very large, uncertain, unevenly distributed, and may occur in a distant future. It seems as if a preoccupation with vulnerability is being replaced by a decision-oriented focus on risk and risk management and the associated uncertainties, with all associated benefits and challenges. Analyses framed around vulnerability have managed to provide for a broad framing of adaptation research around coupled human-environmental systems, and such approaches have been influential as research-organizing concepts; yet the major difficulty of carrying out empirical case studies at this level of complexity has meant a lack of empirical rigor. On the other hand, notions of risk and risk management bring along well defined tools, methods and metrics and provide for a clearer decision orientation, yet have often more narrowly focussed on single external stressors as well as the short term.

Our paper assesses the newly forming landscape on risk analysis for climate adaptation assessment. Informed by case studies conducted in the EU FP7 project MEDIATION, which are serving as a laboratory to further develop thinking on risk management, we critically discuss developments in the newly emerging field of climate risk analysis. We find that risk analysis is being embraced in different facets and forms, all of which may be useful starting points in their own right. We suggest, and provide empirical backing, that particularly useful analytical entry points are organized around the concepts of adaptive management, robustness and transformation.