Climate as a Risk Factor for Armed Conflict: State of Knowledge and Directions for Research

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Abstract

In this presentation, we report on a comprehensive and balanced assessment of the relationship between climate and conflict risks and its implications for future directions of research. Research findings on the relationship between climate and conflict are diverse and contested. Based on the judgments of experts representing a broad range of disciplines and analytical approaches, we have assessed current understanding. The assessment is structured around the importance of climate as a driver of organized armed conflict within countries, changes in conflict risk across climate futures, and implications for conflict risk reduction and climate change adaptation. Across experts, best estimates are that 3-20% of conflict risk over the last century has been influenced by climate, and none of their individual ranges excludes a role of climate in 10% of conflict risk to date. There is agreement that climate variability and change shape the risk of organized armed conflict within countries. However, other drivers are judged substantially more influential for conflict overall, and the mechanisms of climate-conflict linkages are a key uncertainty. Intensifying climate change is estimated to increase future conflict risk as additional linkages become relevant, although uncertainties also expand. Synoptic understanding of the climate-conflict relationship is important even if climate's role is relatively minor among the drivers of conflict. Given that conflict has pervasive detrimental human, economic, and environmental consequences, climate-conflict linkages, even if minor, would significantly influence the social costs of carbon and decisions to limit future climate change. The assessment has pointed to the different ways climate may interact with the major drivers of conflict risk. Crosscutting priorities for future directions of research include (1) deepening insight into climate-conflict linkages and conditions under which they manifest, (2) ambitiously integrating research designs, (3) systematically exploring future risks and response options, responsive to ongoing decision-making, and (4) evaluating the effectiveness of interventions to manage climate-conflict links. The implications of this expanding scientific domain unfold in real time.

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An expert assessment of climate change and the risk of violent conflict

1) Individual expert elicitation

2) Expert group deliberation

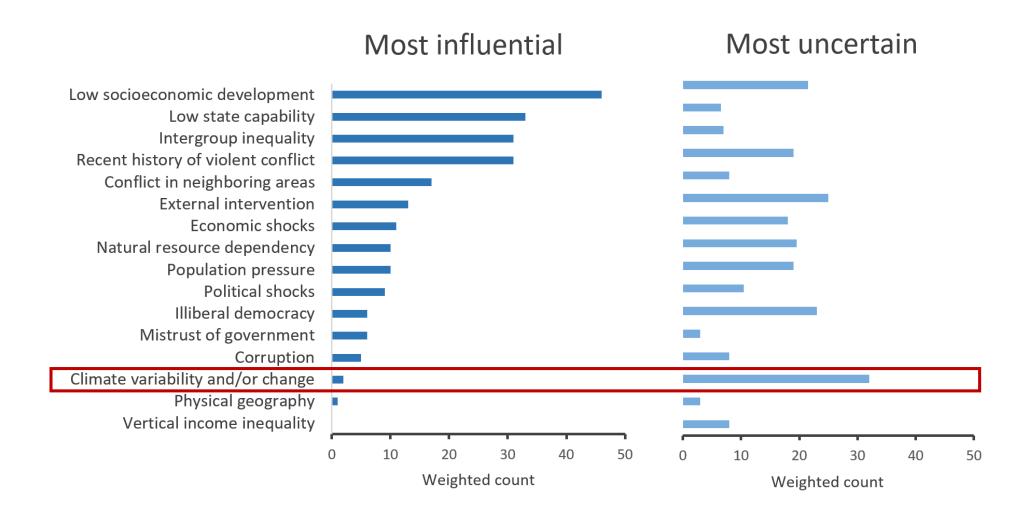


3) Synthesis publication by the expert group

Expert group: N. Adger, H. Buhaug, M. Burke, J. Fearon, C. Hendrix, J.-F. Maystadt, J. O'Loughlin, P. Roessler, J. Scheffran, K. Schultz, and N. von Uexkull

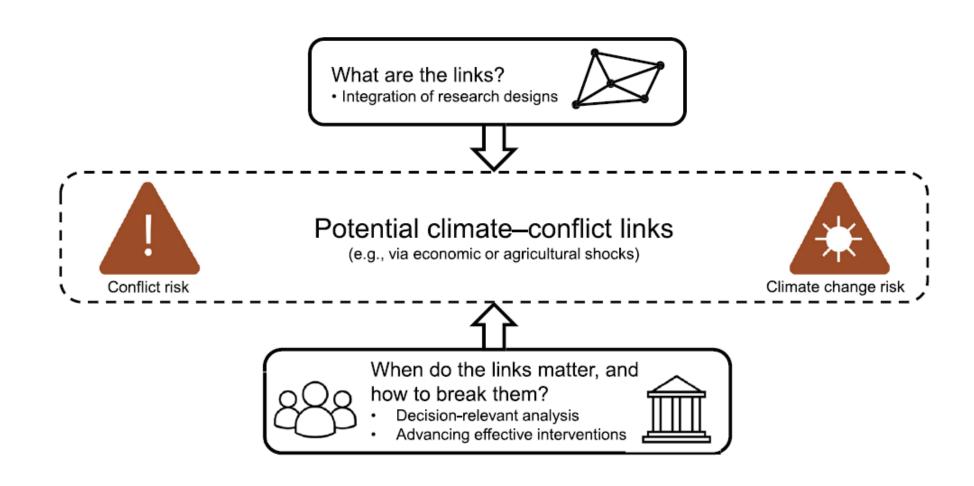
Mach et al. Nature (2019). kmach@miami.edu

Most influential & uncertain factors for conflict



Mach et al. Nature (2019). kmach@miami.edu

Directions for research on climate and conflict



Mach et al. Earth's Future (2020). kmach@miami.edu



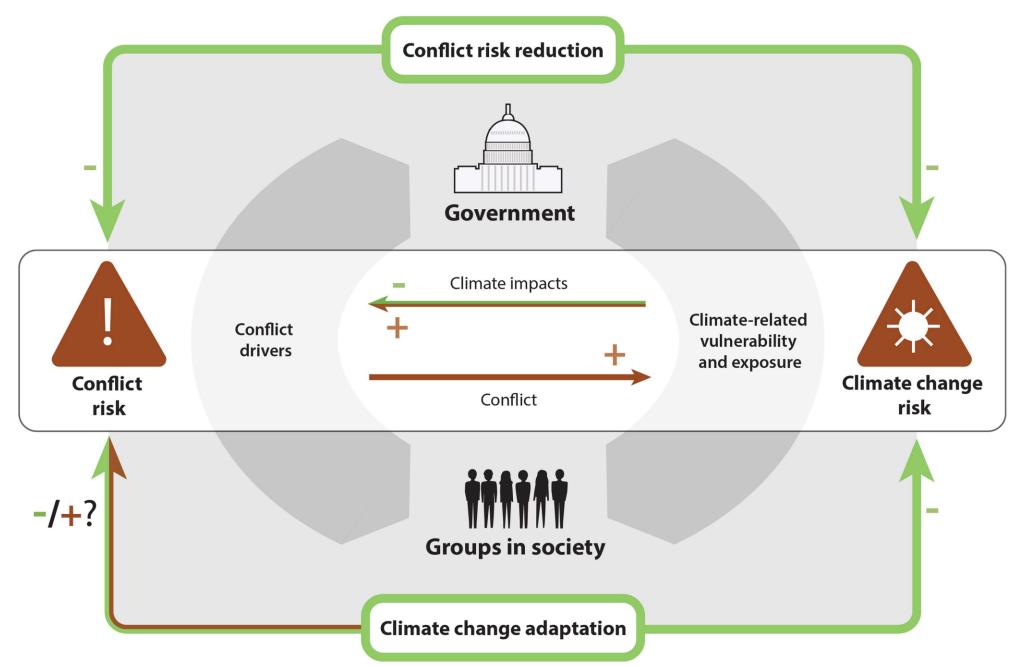
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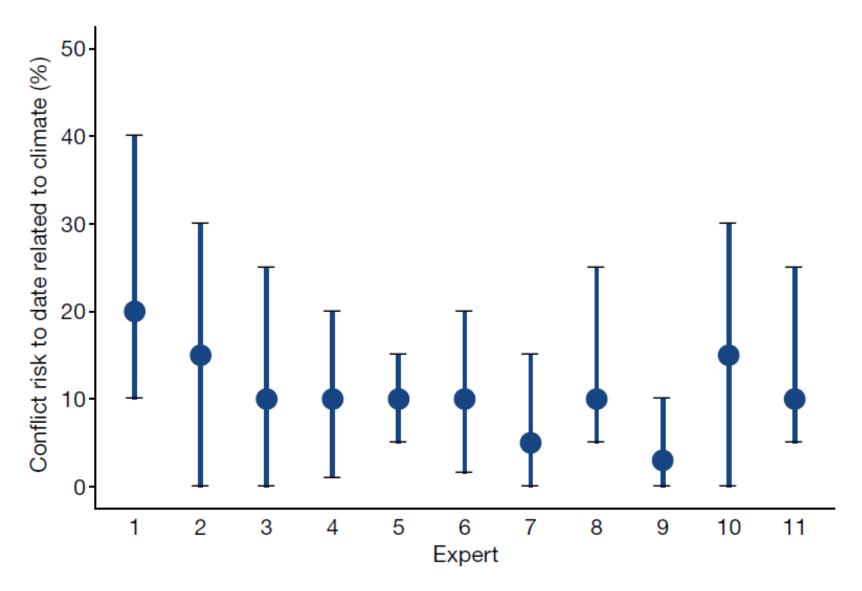


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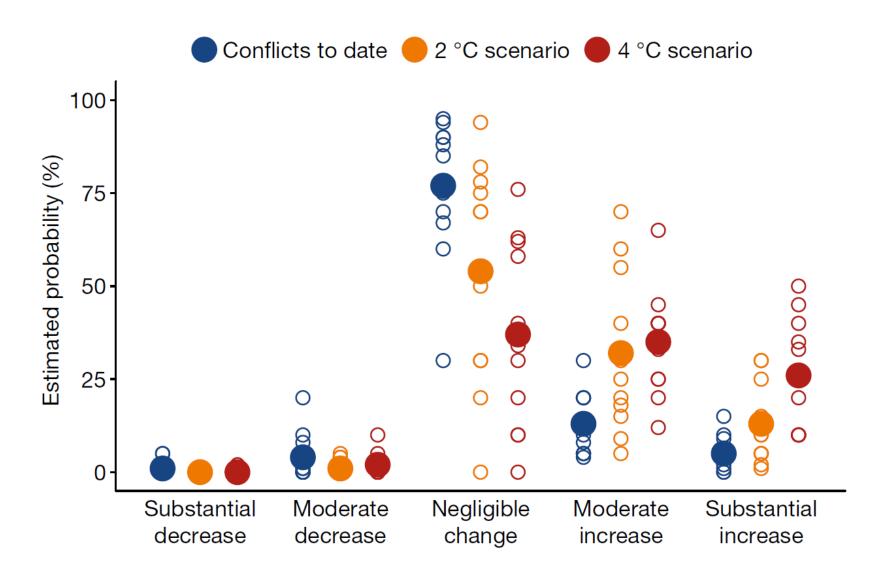


Relationship between climate and conflict risk to date



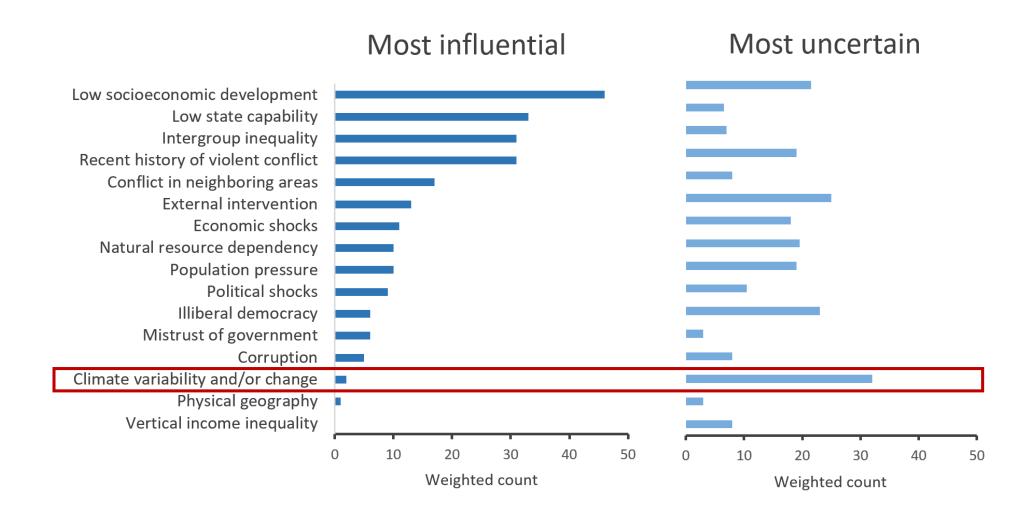


Climate as a risk factor for armed conflict



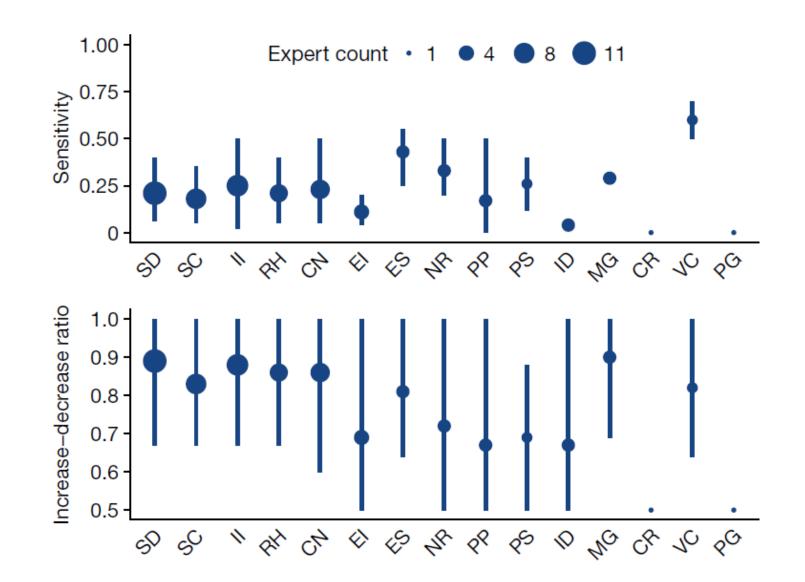


Most influential & uncertain factors for conflict



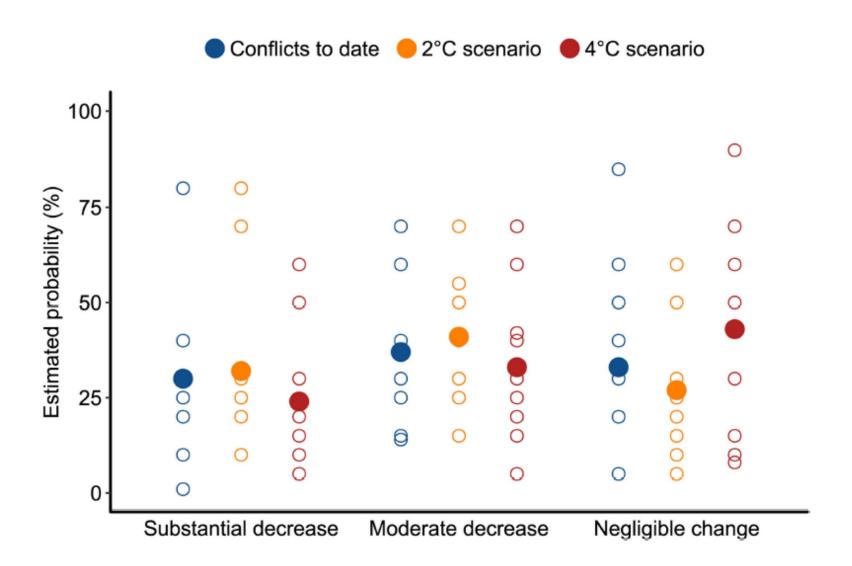


Factors driving conflict risk and relationship to climate to date





Potential to reduce climate-related conflict risk



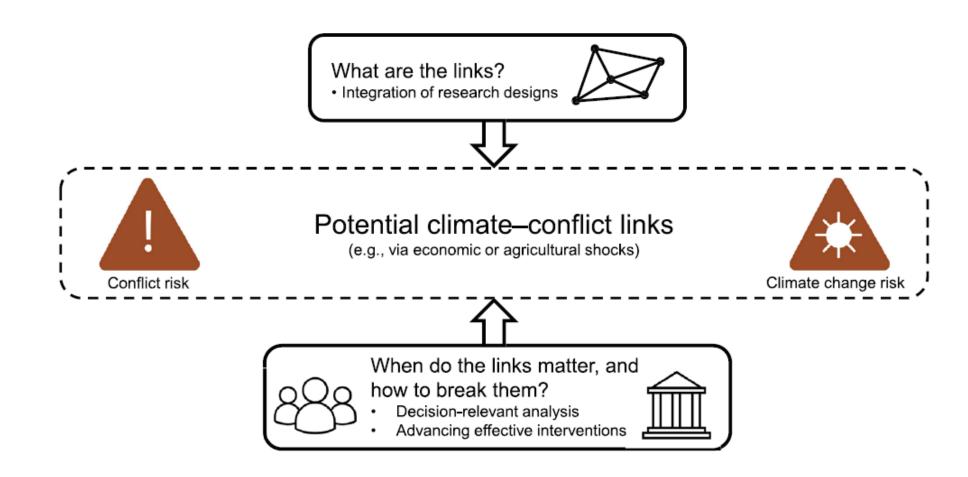


Conflict risk reduction and climate change adaptation

- International peacekeeping
- Development assistance
- State capability building
- Economic diversification and resilience
- International governance
- Migration



Directions for research on climate and conflict





Future directions for research

- Climate-conflict linkages and conditions under which they manifest
- Ambitious integration of research designs
- Exploration of future risks & options--responsive to decision-making needs
- Effectiveness of interventions to manage climate-conflict links



Science-policy challenges

- Inevitable presence of societal and policy dynamics in climate-conflict knowledge production
- Integrating diverse lines of evidence
- Encompassing uncertainties and contested priorities
- Encouraging interactions among researchers, decision-makers, societies

Framework for co-production of actionable climate security science

