

PRIO

Science diplomacy from a climate security perspective

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CLIMSEC in a nutshell

- Title: **C**limate Variability and **S**ecurity Threats
- Period: 2015–2020
- Funding: ERC CoG
- Aim: Assess indirect connections between climate variability and social conflict
- Scope: Global focus, contemporary era (and beyond)

- RQ: *Does climate variability contribute to conflict risk?
If so, how and under what conditions?*

Powerful conceptions within policy

“Climate change is an **all-encompassing threat** to human health, to global food supply, and to peace and security”

- Kofi Annan, *UN Sec.-Gen.* (2006)

“It is **not a coincidence** that immediately prior to the **civil war in Syria**, the country experienced the **worst drought on record**”


- John Kerry, *US Sec. of State* (2014)

Climate change may “lead to greater competition for the earth’s resources... [and] increased danger of **violent conflicts and wars**, within and between states”

- *Norwegian Nobel Committee* (2007)

(The other perspective)



Donald J. Trump 

@realDonaldTrump



In the beautiful Midwest, windchill temperatures are reaching minus 60 degrees, the coldest ever recorded. In coming days, expected to get even colder. People can't last outside even for minutes. What the hell is going on with Global Warming? Please come back fast, we need you!

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What do the scientists say?

1. “no systematic and direct causal relationship”

– Bernauer et al. (*Env Res Letters* 2012)

2. “no connection or only weak evidence”

– Scheffran et al. (*Science* 2012)

3. “little, if any, consensus exists”

– Deligiannis (*Glob Env Politics* 2012)

4. “only limited support”

– Gleditsch (*J Peace Res* 2012)

5. “mostly inconclusive insights”

– Theisen et al. (*Clim Change* 2013)

6. “little robust evidence”

– Klomp & Bulte (*Agr Econ* 2013)

7. “the link remains unproven”

– Solow (*Nature* 2013)

8. “inadequate scientific evidence”

– Zografos et al. (*Glob Env Ch* 2014)

9. “research does not conclude”

– Adger et al. (*IPCC AR5* 2014)

10. “there is still no consensus”

– Salehyan (*Polit Geogr* 2014)

11. “mixed and varied evidence”

– Sakaguchi et al. (*Current Clim. Change Rep* 2017)

12. “inconsistent associations are reported”

– *Global Warming of 1.5°C (IPCC Special Report* 2018)

13. “the literature has not detected a robust and general effect”

– Koubi (*Annual Rev Polit Sci* 2019)

14. “role of climate is judged to be small”

– Mach et al. (*Nature* 2019)

Civil conflict sensitivity to growing-season drought

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Edited by B. L. Turner, Arizona State University, Tempe, AZ, and approved August 31, 2016 (received for review May 11, 2016)

To date, the research community has failed to reach a consensus on the nature and significance of the relationship between climate variability and armed conflict. We argue that progress has been hampered by insufficient attention paid to the context in which droughts and other climatic extremes may increase the risk of violent mobilization. Addressing this shortcoming, this study presents an actor-oriented analysis of the drought–conflict relationship, focusing specifically on politically relevant ethnic groups and their sensitivity to growing-season drought under various political and socioeconomic contexts. To this end, we draw on new conflict event data that cover Asia and Africa, 1989–2014, updated spatial ethnic settlement data, and remote sensing data on agricultural land use. Our procedure allows quantifying, for each ethnic group, drought conditions during the growing season of the locally dominant crop. A comprehensive set of multilevel mixed effects models that account for the groups' livelihood, economic, and political vulnerabilities reveals that a drought under most conditions has little effect on the short-term risk that a group challenges the state by military means. However, for agriculturally dependent groups as well as politically excluded groups in very poor counties, a local drought is found to increase the likelihood of sustained violence. We interpret this as evidence of the reciprocal relationship between drought and conflict, whereby each phenomenon makes a group more vulnerable to the other.

armed conflict | climate variability | drought | ethnicity | georeferenced event data

Significance

Understanding the conflict potential of drought is critical for dealing effectively with the societal implications of climate change. Using new georeferenced ethnicity and conflict data for Asia and Africa since 1989, we present an actor-oriented analysis of growing-season drought and conflict involvement among ethnic groups. Results from naive models common in previous research suggest that drought generally has little impact. However, context-sensitive models accounting for the groups' level of vulnerability reveal that drought can contribute to sustaining conflict, especially for agriculturally dependent and politically excluded groups in very poor countries. These results suggest a reciprocal nature–society interaction in which violent conflict and environmental shock constitute a vicious circle, each phenomenon increasing the group's vulnerability to the other.

Author contributions: N.v.U., M.C., H.F., and H.B. designed research; N.v.U. analyzed data; N.v.U., H.F., and H.B. wrote the paper; and M.C. created the dataset. The authors declare no conflict of interest. This article is a PNAS Direct Submission. Freely available online through the PNAS open access option. Data deposition: The replication data reported in this paper are available from Peace Research Institute Oslo's data repository, <https://www.prio.org/Data/Replication-Data>, as well as the Department of Peace and Conflict Research, Uppsala University, www.pcr.uu.se/data. ¹To whom correspondence should be addressed. Email: nina.von_uexkull@pcr.uu.se. This article contains supporting information online at www.pnas.org/lookup/suppl/doi:10.1073/pnas.1607542113/-/DCSupplemental.

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“These results suggest a reciprocal nature–society interaction in which violent conflict and environmental shock constitute a vicious circle, each phenomenon increasing the group’s vulnerability to the other”

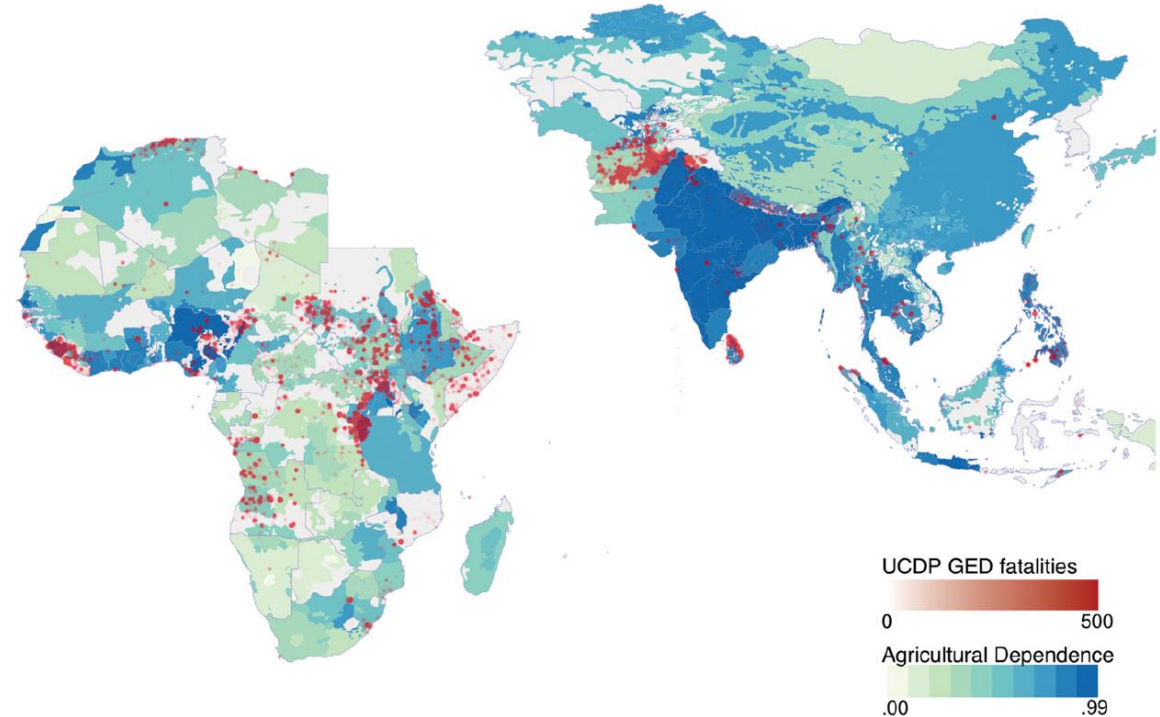


Fig. 1. Agricultural dependence by ethnic group and density of conflict events

CLIMSEC findings II

ANALYSIS

<https://doi.org/10.1038/s41586-019-1300-6>

Climate as a risk factor for armed conflict

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Research findings on the relationship between climate and conflict are diverse and contested. Here we assess the current understanding of the relationship between climate and conflict, based on the structured judgments of experts from diverse disciplines. These experts agree that climate has affected organized armed conflict within countries. However, other drivers, such as low socioeconomic development and low capabilities of the state, are judged to be substantially more influential, and the mechanisms of climate–conflict linkages remain a key uncertainty. Intensifying climate change is estimated to increase future risks of conflict.

Research over the past decade has established that climate variability and climate change may influence the risk of violent conflict, including organized armed conflict^{1,2}. However, use of different research designs, datasets and methods has resulted in divergent findings and stark questions about legitimate approaches to scientific inference^{3–9}. Previous analyses, many from authors of this paper, have both asserted and refuted a substantial role for climate in conflicts to date and have repeatedly triggered dissenting perspectives^{1,3–9,21}. Even syntheses have failed to clarify areas of agreement and reasons for disagreement^{14,16,19,22–25}. There are important uncertainties about when and how climate has caused conflict to date, and under future scenarios^{23,27,28}. The lack of clarity on current knowledge limits informed management of the risks of conflict to states and human security, and of the risks of continuing greenhouse gas emissions.

Expert elicitation is a well-validated method for documenting the judgments of experts about available evidence²⁹ (Methods). For socially relevant topics with divergent evidence, experimental comparisons of structured elicitation and group-panel assessment have suggested that individual elicitation paired with collective assessment can better reveal the state of knowledge than either approach in isolation^{30–32}. Here, we develop a synoptic assessment of the relationship between climate and conflict.

The assessment approach and expert group

Our focus is organized armed conflict within countries (Extended Data Fig. 1). Previous crosscutting analyses of climate and conflict have combined individual-level violence (for example, suicide or domestic violence) through to war between countries^{3,4,9}. However, drivers of suicide fundamentally differ from drivers of world wars. To enable a focused evaluation, the social scale of violence is constrained to organized armed conflict within countries (that is, state-based armed conflict, non-state armed conflict and one-sided violence against civilians)³³. These forms of violent conflict may affect or be affected by conflict in neighbouring areas or external intervention. In evaluating

the effects of climate, climate-related variability, hazards, trends and change are all included (for example, related to temperature, precipitation, modes of variability, such as the El Niño Southern Oscillation, and extreme events, such as droughts and floods).

The authors of this manuscript consist of 3 assessment facilitators and a group of 11 climate and conflict experts. The group of 11 experts is a sample of the most experienced and highly cited scholars on the topic, spanning relevant social science disciplines (especially political science, economics, geography and environmental sciences), epistemological approaches and diverse previous conclusions about climate and conflict (Methods). The selection of the expert group was done based on expertise necessary to resolve scientific disagreement about the contribution of climate to conflict risks globally and in conflict-prone regions, which requires consideration of comparative and crosscutting analyses and replicable empirical research. For climate and conflict overall, however, the scope of relevant expertise in scholarship, practice and policy is vast. Semi-structured interviews with purposively sampled stakeholders were used to inform the project.

The expert group participated in 6–8-h individual expert-elicitation interviews and a subsequent 2-day group deliberation (Methods). The interview and deliberation protocols were collectively developed by the authors and then administered by the assessment facilitators. In total, 950 transcript pages from the interviews and deliberation were iteratively analysed and distilled. The results presented here include subjective probabilistic judgments documented individually (Extended Data Figs. 2–4) and the origins of these judgments in the scientific literature (Supplementary Information). The approach establishes a foundation for assessing—across the full academic field—the strengths and limitations of our current understanding and the reasons for disagreement.

This assessment approach complements existing crosscutting reviews, meta-analyses and perspectives on climate and conflict^{28,9,17,23,25–27}. The methods here go beyond previous syntheses by (1) systematically characterizing judgments not only about

“These experts agree that climate has affected organized armed conflict within countries. However, other drivers [..] are judged to be substantially more influential”

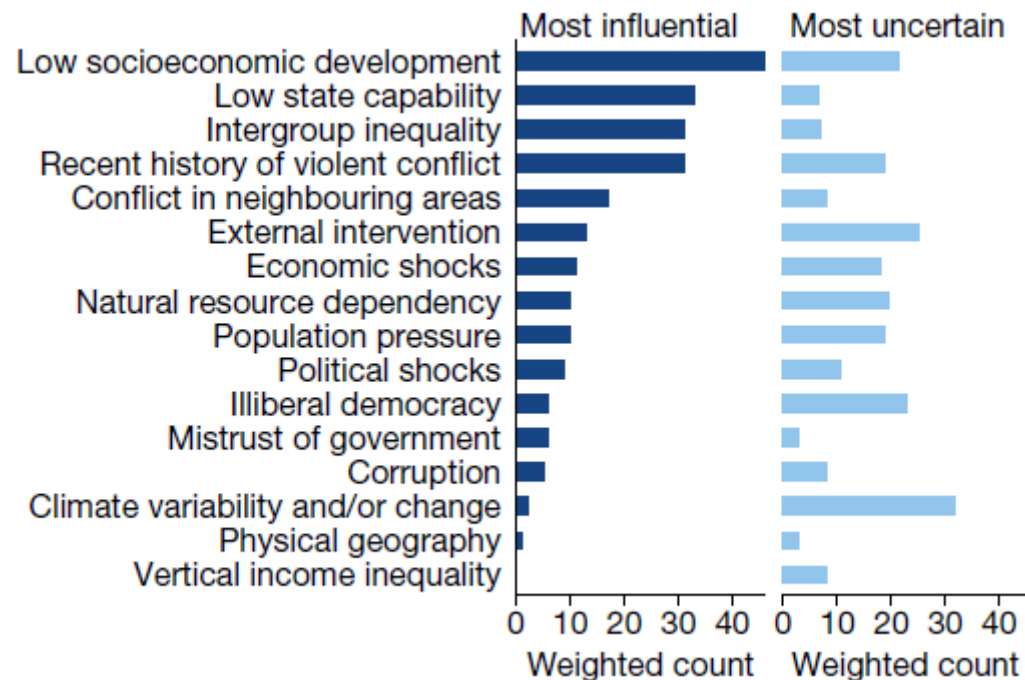


Fig. 3. Expert assessment of factors that drive conflict risk

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CLIMSEC findings III



“Consistent with theory, we find that [the climate-economy-conflict] relationship is most prominent among recently downgraded groups, especially in the context of agricultural dependence and low local level of development”

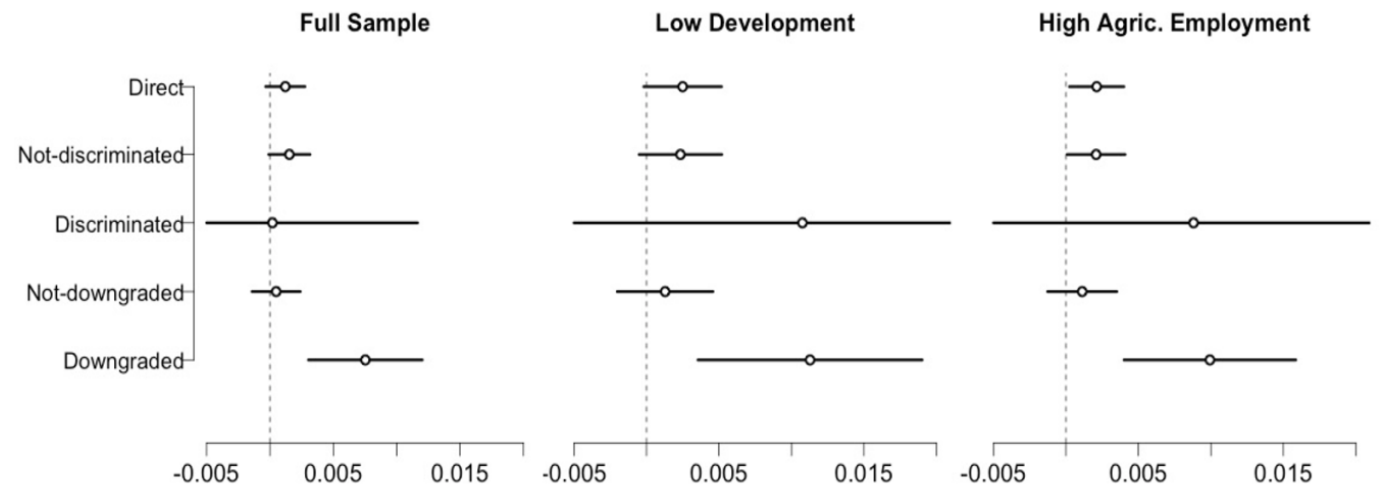


Fig. 1. Marginal effect of weather-induced income shock on civil conflict risk

Science diplomacy

- Three dimensions of science diplomacy (AAAS, Royal Society):
 - a) “Science in diplomacy” – Science can provide advice to inform and support foreign policy objectives
 - b) “Diplomacy for science” – Diplomacy can facilitate international scientific cooperation
 - c) “Science for diplomacy” – Scientific cooperation can improve international relations

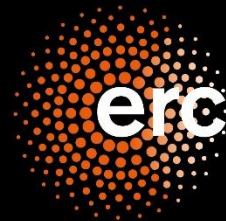
Science–policy interaction in CLIMSEC

- **Direct**
 - *Joint seminars*
 - *Policy briefs*
 - *Reviews (incl. IPCC)*
- **Indirect**
 - *Scientific publications*
 - *Op-eds*
 - *Social media*

Lessons learned

- Interacting with policy actors is important and rewarding, but also challenging!
- Challenge: How to navigate a polarized and contentious field that (seemingly) is little receptive to cautious and nuanced messages?
 - a) Keep shut about null-findings to avoid ‘damaging the cause’?*
 - b) Communicate modest results and risk being rendered irrelevant (or labeled a denialist)?*
 - c) Emphasize upper-bound risk and contribute to sensationalism?*
- My experience: Policy actors now more receptive to nuanced messages (although firm beliefs and myths among interest groups with a clear agenda remain a barrier)
 - *Climate security thinking in policy circles gradually converging with science*
- Gov’t review of IPCC AR6 will be interesting...

Thank you for your patience



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