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## [Mikael Granberg honorary professor at RMIT University, Australia](#)

CNDS fellow Mikael Granberg, professor in political science and director of the Centre for Societal Risk Research has been appointed honorary professor at RMIT University in Melbourne, Australia.

Mikael has been appointed honorary professor at RMIT's School of Global, Urban and Social Studies (GUSS). And, through this appointment, Granberg also holds a position as associated researcher at RMIT's Centre for Urban Research. One focus area of RMIT with special relevance for Granberg's research is sustainable cities.



## [Giuliano Di Baldassarre, Director of the CNDS, was awarded three prestigious awards this autumn:](#)

1. The [Plinius Medal](#) awarded by the European Geosciences Union (EGU). The medal recognizes interdisciplinary researchers in natural hazards who have achieved outstanding research achievements in fields related with natural hazards, important interdisciplinary activity in two or more fields related with this topic, and research that has been applied in the mitigation of risks from natural hazards. Giuliano will be celebrated and deliver a medal lecture during the [EGU General Assembly 2021](#), which will be held in April 2021.
2. The [2020 Paul A. Witherspoon Lecture](#) awarded by the American Geophysical Union (AGU) which is the world's largest society in Earth Sciences. The Paul Witherspoon Lecture award is given in recognition of outstanding achievements by a mid-career scientist (within 10 to 20 years since PhD) in advancing the field of hydrologic sciences. The award also acknowledges that the awardee shows exceptional promise for continued leadership in the hydrologic sciences.
3. The [Thuréus Prize awarded by the Swedish Royal Society of Sciences](#) in Uppsala with the motivation "for his study of floods, in particular the complex relationship between water flows, population dynamics and susceptibility".



CNDS fellow [Gabriele Messori](#) will receive an ERC starting grant of 1.5 M euro for his five-year project "Compound Climate Extremes in North America and Europe: from dynamics to predictability".

The project team will conduct both theoretical studies on the physical processes underlying extreme event occurrences and more applied work on extreme event predictability.

Different climate extremes, such as heavy rains and strong winds, can interact and result in compound extremes with a larger socio-economic impact than the sum of their individual components. Picture strong winds ripping off a house's roof while simultaneously heavy precipitation floods the house; the damage will be larger than if the two happened separately, allowing to mend the roof before the rain hit. Similarly, a landowner whose crops in the north of the country are damaged by frost while farm land further south face flooding, will take a heavier hit than if the two events happened years apart. Elucidating the nature of these compound extremes is a societally relevant goal. However, it is not easily realized from a scientific standpoint. A few decades ago it would not have been possible to collect such data without going out in the field, but thanks to today's remotely-sensed data and large climate databases on the internet, there is a lot that can be done without having to collect new data.



The Journal of European Public Policy awarded CNDS fellow Charles F. Parker, Thomas Persson and Sten Widmalm with its 2019 Best Paper Prize.

Parker, Charles F., Persson, Thomas, & Widmalm, Sten (2019). [The effectiveness of national and EU-level civil protection systems: Evidence from 17 member states](#). *Journal of European Public Policy*, 26 (9), 1312–1334.

JEPP's two-member jury (Charlotte Burns and Thomas Plümper of the Editorial Board) selected the paper by Parker, Persson and Widmalm as 2019's best paper because it applies a genuine public policy perspective to the substantively important field of natural disasters. In addition, the jury felt that the paper sheds light on both the logic and effectiveness of public policies and the importance of public policy for the resilience in natural disasters. They also liked the integration of EU public policies with a comparative perspective at the national level. The authors convincingly demonstrate that effective public policies provide an organizational framework with an effective crisis management. Both factors together provide the necessary interplay of a prestructured response that the affected population can trust upon and the flexibility needed because ultimately each disaster is different. The jury's decision was also influenced by our belief that the same analytical framework can be utilized by political scientists to analyze the effectiveness of the national response to the Sars-Cov-2 pandemic, making the paper even more relevant for contemporary European public policies.



### Decrease in the number of fatalities caused by natural hazards

CNDS Director Giuliano Di Baldassarre was interviewed by Radio Sweden (Sveriges Radio) regarding the decreasing number of fatalities from natural hazard related disasters. He briefly discussed how individuals, communities and institutions around the world have become better in coping with natural hazards and saving human lives.

[Summary](#) and [chart](#) presenting data regarding absolute number of deaths per year caused by natural hazard related disasters. Listen to the entire [interview here](#), which is primarily in English but includes some parts in Swedish.



### Human responses to rising sea levels

CNDS Director Giuliano Di Baldassarre was also interviewed on the Swedish radio program [Vetenskapsradion På djupet](#) about the methods and responses that are being discussed to deal with the fact that climate change is contributing to rising sea levels that are invading coastlines and forcing millions of people to flee.

At first glance, the threat and problems may seem insurmountable with huge numbers of people being forced to become climate refugees. But historical experiences show that densely populated coastal communities have been able to withstand dramatically rising sea levels. However in those past cases it has not been about sea level changes due to global warming, but rather that the cities have sunk in relation to the sea. In efforts to counter this, new technology and methods were developed to hold back the sea.

The following contributed to the radio program: Robert Nicholls, Professor of Coastal Engineering and Head of the Tyndall Center at the University of East Anglia, [Giuliano di Baldassarre, Professor of Hydrology at Uppsala University and Head of the CNDS Center for Natural Disaster Science](#), and Gia Destouni, Professor of Hydrology at Stockholm University

# CNDS PERSPECTIVES ON THE CORONAVIRUS PANDEMIC IN ENGLISH



## Covid-19 in Italy and Sweden

In *Bloomberg Opinion* CNDS Director Giuliano Di Baldassarre provides some insight regarding the current pandemic in Italy and Sweden.

According to Giuliano Di Baldassarre, consistency is a key component for ensuring Covid-19 policies are sustainable in the long run. Thus, while Italy shows that intervention pays off, Sweden is a reminder that this is a marathon more than a sprint.

There are no quick fixes or perfect template for Covid-19. Every country is struggling to stay ahead of the game, but are nevertheless making mistakes.

[Read new Bloomberg opinion piece written by Lionel Laurent here.](#)



## I regeringens coronatjänst

Text: Jennie Aquilonius  
Foto: Susanne Kronholm

När coronapandemin bröt ut tog CNDS fellow Fredrik Bynander av sig forskarrocken och klev in som tjänsteman på regeringens kriskansli. Som docent i krisberedskap går han gärna mellan akademi och praktik – ett arbetssätt som ofta möts med höjda ögonbryn från andra delar av forskarvärlden.

### ”Vi behöver hjälp, kan du komma nu?”

Klockan är ungefär fyra på eftermiddagen den 18 mars när telefonen ringer. Fredrik Bynander sitter på sitt kontor och håller på att stänga ner verksamheten på grund av coronapandemin. Det är hans gamla chef från regeringskansliet som ringer. Mellan 2009 och 2012 jobbade Fredrik Bynander som ämnessakkunnig och chef vid statsrådsberedningens kansli för krishantering. Hon säger: Vi behöver hjälp, kan du komma nu? Han åker direkt. Fylls av en känsla av spänning. Efter en timme är han anställd.



UPPSALA  
UNIVERSITET



Swedish  
Defence  
University

Vanligtvis trösklar demokratihjulen långsamt på regeringskansliet, RK. Alla departement brukar få tycka till om allting, så kallad gemensambereidning. Nu går det snabbare. Vissa saker gemensambereids inte alls.

– En del ortodoxa RK-människor tyckte att det var skandal, men det var kris och enda sättet att komma vidare.

Fredrik Bynander fick i uppdrag att sätta ihop en grupp med analyschefer från sju departement. Första uppgiften var att ta fram planeringsförutsättningar inför sommaren: Vilka var de stora riskområdena?

Därefter tittade de på hösten. En andra coronavåg var på väg. Analysgruppen frågade: Kommer vi att göra om samma misstag som under våren? Givetvis gör vi inte det! tyckte alla departementen. Det kan visst hända, svarade Fredrik Bynander och hans kollegor. Ta skyddsutrustningen, till exempel.

Han berättar att Sverige under våren hade vissa reserver av skyddsutrustning att ta av, från till exempel olika labb och begravningsbyråer. Ändå var tillgången ett jättestor problem. Nu var reserverna tömda och när analysgruppen tittade närmare hade ingen fyllt på.

Dessutom hade Socialstyrelsen fått i uppdrag av regeringen att undersöka om Sverige kunde bidra med ett eventuellt överskott av skyddsutrustning till bland annat Norge. Om den svenska coronasituationen åter blev som under våren skulle skyddsutrustningsläget vara ännu värre nu.

– Vilket vi skrev i vårt planeringsunderlag, och det väckte ett jättestor liv internt. Men vi ansåg att det fanns en risk att det skulle gå åt pipan och då hade regeringen framstått som idioter.

## Brister i krisberedskapen



Coronaviruset blottade en rad brister i beredskapen, menar Fredrik Bynander. Som brist på skyddsutrustning och svårigheter att komma igång med smittspårning. Sverige vaknar många gånger sent när det gäller krishantering, tycker han. Ofta står organisatoriska oklarheter i vägen.

– När man jobbar i den svenska myndighetsfären dyker det alltid upp en massa frågor: Är det vi eller de som ska göra det här? Ska vi lägga ut ett regeringsuppdrag och i så fall på vem? Det är ett fattigdomsbevis att vi inte har rätt ut det i förväg och bara kan komma till skott, och att folk inte prestigelöst säger ”Japp vi tar den bollen!”

Däremot tycker han att regeringen förstod att krishantering består av försök och nitar.

– Du står inför en stor händelse som inte inträffat tidigare, då gäller det att agera, och blir det fel får man skruva på det längs vägen.

Forskarhjälpan snurrade på i bakhuvudet under tiden på regeringskansliet. Väl ute på andra sidan hade Fredrik Bynander flera nya forskningsfrågor med sig. Till exempel samarbeten mellan privata och offentliga aktörer, något han menar att vi är dåliga på i Sverige.



**Hur har krishanteringen i de svenska kommunerna utförts under pandemin? Det är en av frågeställningarna i en studie där CNDS-forskare vid Karlstad universitet tillsammans med sina kollegor vid Mittuniversitetet granskar vilka kommuner som aktiverat sin krisledningsnämnd och vilka som inte gjort det.**

Den lokala nivåns betydelse inom krisberedskap och hantering är helt avgörande när det gäller strukturer och processer för viktiga beslut som påverkar samhällets resiliens. Det saknas dock djupare kunskap om hur strukturer och processer fungerar, påverkas och förändras under en pågående samhällskris.

### **Projekt pengar beviljade**

Centrum för forskning om samhällsrisker, CSR, vid Karlstads universitet har tillsammans med Risk and Crisis Research Centre, RCR, vid Mittuniversitetet, beviljats medel för genomförande av en forskningsstudie av Myndigheten för samhällsskydd och beredskap, MSB. Studien kommer att undersöka om och hur kommuner använder möjligheten att aktivera sin krisledningsnämnd till följd av coronapandemin. Genom en kartläggande informationsinhämtning och intervjuer i sex kommuner kommer studien att svara på när, hur, varför samt hur länge krisledningsnämnder aktiveras; Vilka sakfrågor och lokala faktorer som korrelerar med aktiveringen; Vilka beslut som fattas av krisledningsnämnden och hur beslutsprocessen går till. Denna kunskap är värdefull teoretiskt och kan användas för utveckling av kommunal krishantering.

– I ett första steg kommer vi att samla in information om vilka kommuner i Sverige som har aktiverat sin krisledningsnämnd under 2020 till följd av coronapandemin samt när, hur och varför nämnden har aktiverats. Informationen analyseras sedan för att klarlägga eventuella samband med smittspridningen samt kommunernas demografi, politiska ledning och tidigare aktivering av krisledningsnämnd, säger CNDSare Mikael Granberg, professor i statsvetenskap och centrumföreståndare för CSR.

### **Viktigt med den lokala betydelsen**

I nästa steg genomförs intervjuer i tre kommuner som har aktiverat krisledningsnämnden samt tre kommuner som inte har gjort det. Forskarna konstaterar i sin projektbeskrivning att den lokala nivåns betydelse inom krisberedskap och krishantering är helt avgörande när det gäller strukturer och processer för viktiga beslut som påverkar samhällets motståndskraft. Målsättningen är därför att den kunskap som hämtas in under projektet ska bidra till att utveckla kommunal krishantering.

## NEW PUBLICATIONS

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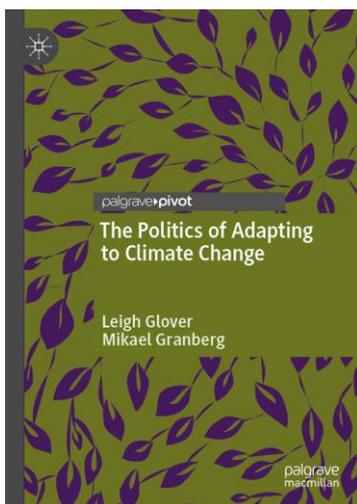
CNDS fellows Malin Mobjörk, Mikael Granberg, and Magnus Johansson together with Camilla Berglund published their article [Sustainable development and cross-disciplinary research education: Challenges and opportunities for learning](#) where they explored how cross-disciplinary influences education.

Research education is a formative phase in a researcher's intellectual development and this article considers the whole research education process, including both its formal and informal aspects. It explores this arena and builds on the experiences of PhD candidates engaged in research education characterised by cross-disciplinary in the realm of sustainable development.

Drawing on pedagogical research on socialisation, this article examines how research education is organised in four research milieus and the experiences of PhD candidates pursuing their education in these learning contexts. The aim is to provide insights into how these research milieus can facilitate future cross-disciplinary research education on sustainable development. The analysis finds that in research milieus that provide courses and seminars about cross-disciplinary, PhD candidates are more confident in situating their own research.

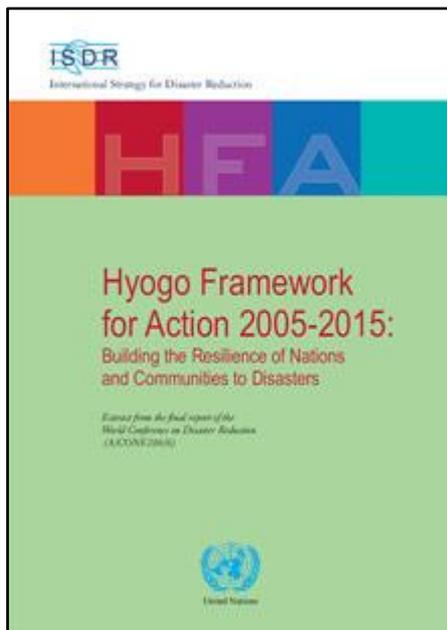
The engagement of senior staff and supervisors in these activities is also key to develop a conceptual apparatus and building the capacity to interact with different disciplines and practitioners. Furthermore, the findings show the importance of communicating about cross-disciplinary throughout the research education process, starting when PhD candidates are recruited and supervisors are appointed.

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### [The Politics of Adapting to Climate Change](#)

In a new book, CNDS fellow Mikael Granberg and his colleague Leigh Glover have examined the political themes and policy perspectives related to, and influencing, climate change adaptation. It provides an informed primer on the politics of adaptation, a topic largely overlooked in the current scholarship and literature, and addresses questions such as why these politics are so important, what they mean, and what their implications are. The book also reviews various political texts on adaptation.



**CNDS PhD candidate Maximilian Wanner recently published 2 articles with preliminary findings from his doctoral project.** The first is on the effectiveness of soft law in international environmental regimes, more specially participation and compliance in the Hyogo Framework for Action, and the second article focuses on the drivers of change in national disaster governance under the Hyogo Framework for Action.

### [1. Drivers of Change in National Disaster Governance under the Hyogo Framework for Action](#)

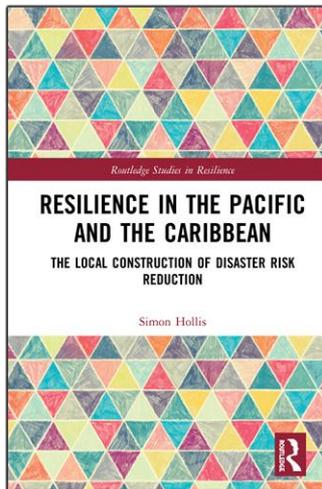
Maximilian Wanner asserts that while many suggestions have been made on what motivates countries to expand their measures for disaster risk reduction (DRR), including the frequency and severity of natural hazards, accountability mechanisms, and governance capacity, few studies have attempted to explain the substantial variation in the adoption of DRR measures across countries. This, despite the fact that theoretical arguments have been developed and evidence collected from small-scale case studies.

Therefore, his study combines available data on DRR measures, natural hazard events, governance, and socioeconomic characteristics to provide a systematic assessment of the changes that have occurred in the state of DRR at the national level. In line with theoretical explanations, there are indeed associations between several measures of frequency and severity and the development of DRR status. Additionally, voice and accountability mechanisms, as well as development aid, might facilitate positive change. Although these first results of a global comparative study on change in DRR have to be taken cautiously, it is a step forward to understanding the drivers of change at the national level.

### [2. The effectiveness of soft law in international environmental regimes: participation and compliance in the Hyogo Framework for Action](#)

In this article, Maximilian Wanner discusses that while a number of recent international environmental regimes (including the Sustainable Development Goals, the Paris Agreement on climate change and the Sendai Framework for Disaster Risk Reduction) rely on soft law featuring voluntary action and wide-ranging provisions for participants and non-binding commitments, the idea of sanctions is often skirted. Because of the increasing prevalence of soft law regimes, their intuitional design attributes and characteristics give rise to new questions about regime effectiveness. Concepts such as compliance and participation that originate from the assessment of the effectiveness of hard law regimes need to be revisited and adapted to this new subset with its distinct characteristics.

The aim of this study, then, is to empirically investigate the prospects of effectiveness in the specific case of the Hyogo Framework for Action 2005–2015 on disaster risk reduction (DRR) as an illustrative case study of soft law regimes. The study, thereby, examines participation and compliance as key factors of regime effectiveness by analysing data and descriptive statistics based on national reports and their indicators on DRR measures. The study not only aims to advance the understanding of concepts central to the assessment of regime effectiveness in the context of soft law regimes. It also investigates DRR for the first time on a global scale from a regime effectiveness perspective documenting variation on the country level and serving as a guide to interesting cases and comparative research for future study.



## Resilience in the Pacific and the Caribbean: The Local Construction of Disaster Risk Reduction

CNDS fellow Simon Hollis, Senior Lecturer in Political Science at the Swedish Defence University, recently published the book "Resilience in the Pacific and the Caribbean: The Local Construction of Disaster Risk Reduction" where he critically examines the global diffusion and local reception of resilience through the implementation of Disaster Risk Reduction (DRR) programmes in Pacific and Caribbean island

Global efforts to strengthen local disaster resilience capacities have become a staple of international development activity in recent decades, yet the successful implementation of DRR projects designed to strengthen local resilience remains elusive. While there are pockets of success, a gap remains between global expectations and local realities. Through a critical realist study of global and local worldviews of resilience in the Pacific and Caribbean islands, this book argues that the global advocacy of DRR remains inadequate because of a failure to prioritise a person-orientated ethics in its conceptualization of disaster resilience. This regional comparison provides a valuable lens to understand the underlying social structures that makes resilience possible and the extent to which local governments, communities and persons interpret and modify their behaviour on risk when faced with the global message on resilience.

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Bondesson, Sara (2020) ["Dealing with Background Inequality in Post-Disaster Participatory Spaces."](#) *Journal of Representative Democracy*, ISSN 0034-4893, E-ISSN 1749-4001.

**Abstract:** This article focuses on mechanisms to handle inequality among participants in claimed participatory spaces. An ethnographic study of the Occupy Sandy network after Hurricane Sandy in New York City shows how activists worked with socio-economically marginalised communities with the aim of empowering them. Yet, the compensatory mechanisms put in place to counteract inequality brought about three problems of differentiation. These were: variation in individual agency, the difficulty of intersectional positions and situated marginalisation beyond commonly acknowledged identity markers.

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Magnus Ekengren and Simon Hollis (2019) [Explaining the European Union's security role in practice.](#) *Journal of Common Market Studies*, ISSN 0021-9886, E-ISSN 1468-5965, Vol. 58, nr 3, s. 616-635.

**Abstract:** European states may no longer expect inter-state violence, but they do expect complex threats emanating from storms, epidemics, terror attacks and earthquakes. The EU has answered these threats through the rapid and far-reaching institutionalization of European security cooperation. However, member states hesitate to use their common capacities. While both intergovernmental and constructivist approaches treat this pattern as evidence of weak integration and as unimportant to the European security community, the authors examine this cooperation through the lens of practice theory and reveal how the growth of EU capacities is fully compatible with a critical and cautious approach to activating these resources in the everyday work of national officials. Using unique empirical data retrieved through participant observation in the first multisectoral crisis management exercise held by the EU, the findings of this analysis sketch the contours of a new type of security community.

Sally Rangelcroft, Melanie Rohse, Eddie W. Banks, Rosie Day, Giuliano Di Baldassarre, Theresa Frommen, Yasunori Hayashi, Britta Höllermann, Karen Lebek, Elena Mondino, Maria Rusca, Marthe Wens & Anne F. Van Loon (2020) [Guiding principles for hydrologists conducting interdisciplinary research and fieldwork with participants](#), Hydrological Sciences Journal.

**Abstract:** To explore and address complex water-related issues, true collaborative, interdisciplinary research at the interface of hydrology and social science is necessary. Accordingly, hydrologists are increasingly working with social sciences and becoming involved in fieldwork with participants. With the overarching aim of facilitating collaboration and interdisciplinary water research, here we discuss important considerations and guiding principles for hydrologists, both those new to and those already familiar with interdisciplinary research, who are: (i) involved in fieldwork with participants; and (ii) working more collaboratively with social scientists. Drawing on first-hand experiences, this paper combines theory and experience from hydrologists and social scientists from their various interdisciplinary research projects to better understand key ethical, theoretical and practical considerations when working with participants. Complementary to this, we discuss the barriers and opportunities in collaborative interdisciplinary research. Facilitating these practices and understandings for hydrologists is essential to strengthen collaboration and to develop more holistic, successful research.

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Mondino, E., Di Baldassarre, G., Mård, J., Ridolfi, E., and Rusca, M. (2020) [Public perceptions of multiple risks during the COVID-19 pandemic in Italy and Sweden](#). *Sci Data* 7, 434 (2020).

**Abstract:** Knowing how people perceive multiple risks is essential to the management and promotion of public health and safety. Here we present a dataset based on a survey (N = 4,154) of public risk perception in Italy and Sweden during the COVID-19 pandemic. Both countries were heavily affected by the first wave of infections in Spring 2020, but their governmental responses were very different. As such, the dataset offers unique opportunities to investigate the role of governmental responses in shaping public perception. In addition to epidemics, the survey considered indirect effects of COVID-19 (domestic violence, economic crises), as well as global (climate change) and local (wildfires, floods, droughts, earthquakes, terror attacks) threats. The survey examines perceived likelihoods and impacts, individual and authorities' preparedness and knowledge, and socio-demographic indicators. Hence, the resulting dataset has the potential to enable a plethora of analyses on social, cultural and institutional factors influencing the way in which people perceive risk.

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Elena Ridolfi; Elena Mondino; Giuliano Di Baldassarre (2020) ["Hydrological risk: modeling flood memory and human proximity to rivers."](#) Hydrology Research.

**Abstract:** Recent literature in sociohydrology has shown the important role of flood memory in shaping hydrological risk. In this paper, we present a system dynamics model of human–flood interactions that simulates how the river proximity of human settlements is altered by changes in flood memory. We also compare our model outcomes with an unprecedented dataset consisting of historical and archeological observations of human settlements in Czech Republic that have been affected by major flood events. This comparison allows us to evaluate the potentials and limitations of our sociohydrological model in capturing essential features of flood risk changes, including the process of resettling farther and closer to the river. Our results show that the accumulation (and decay) of collective memory has potential in explaining temporal changes of flood risk driven by the occurrence (or absence) of major events. As such, this study contributes to advancing knowledge about the complex dynamics of human–water systems, while providing useful insights in the field of flood risk reduction.

Philip J. Ward, Marleen C. de Ruiter, Johanna Mård, Kai Schröter, Anne Van Loon, Ted Veldkamp, Nina von Uexkull, Niko Wanders, Amir AghaKouchak, Karsten Arnbjerg-Nielsen, Lucinda Capewell, Maria Carmen Llasat, Rosie Day, Benjamin Dewals, Giuliano Di Baldassarre, Laurie S. Huning, Heidi Kreibich, Maurizio Mazzoleni, Elisa Savelli, Claudia Teutschbein, Harmen van den Berg, Anne van der Heijden, Jelle M.R. Vincken, Maarten J. Waterloo, Marthe Wens (2020) "[The need to integrate flood and drought disaster risk reduction strategies.](#)" Water Security, Volume 11, 100070, ISSN 2468-3124.

**Abstract:** Most research on hydrological risks focuses either on flood risk or drought risk, whilst floods and droughts are two extremes of the same hydrological cycle. To better design disaster risk reduction (DRR) measures and strategies, it is important to consider interactions between these closely linked phenomena. We show examples of: (a) how flood or drought DRR measures can have (unintended) positive or negative impacts on risk of the opposite hazard; and (b) how flood or drought DRR measures can be negatively impacted by the opposite hazard. We focus on dikes and levees, dams, stormwater control and upstream measures, subsurface storage, migration, agricultural practices, and vulnerability and preparedness. We identify key challenges for moving towards a more holistic risk management approach.

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Lucia Tamburino, Giuliano Di Baldassarre & Giulia Vico (2020) "[Water management for irrigation, crop yield and social attitudes: a socio-agricultural agent-based model to explore a collective action problem.](#)" Hydrological Sciences Journal, 65:11, 1815-1829.

**Abstract:** When rainfall does not meet crop water requirements, supplemental irrigation is needed to maintain productivity. On-farm ponds can prevent excessive groundwater exploitation – to the benefit of the whole community – but they reduce the cultivated area and require investments by each farmer. Thus, choosing the source of water for irrigation (groundwater vs on-farm pond) is a problem of collective action. An agent-based model is developed to simulate a smallholder farming system; the farmers' long-/short-view orientation determines the choice of the water source. We identify the most beneficial water source for economic gain and its stability, and how it can change across communities and under future climate scenarios. By using on-farm ponds, long-view-oriented farmers provide collective advantages but have individual advantages only under extreme climates; a tragedy of the commons is always possible. Changes in farmers' attitudes (and hence sources of water) based on previous experiences can worsen the economic outcome

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John E. Walsh, Thomas J. Ballinger, Eugénie S. Euskirchen, Edward Hanna, Johanna Mård, James E. Overland, Helge Tangen, and Timo Vihma (2020) "[Extreme weather and climate events in northern areas: A review.](#)" Earth-Science Reviews. Volume 209, October 2020.

**Abstract:** The greatest impacts of climate change on ecosystems, wildlife and humans often arise from extreme events rather than changes in climatic means. Northern high latitudes, including the Arctic, experience a variety of climate-related extreme events, yet there has been little attempt to synthesize information on extreme events in this region. This review surveys work on various types of extreme events in northern high latitudes, addressing (1) the evidence for variations and changes based on analyses of recent historical data and (2) projected changes based primarily on studies utilizing global climate models. The survey of extreme weather and climate events includes temperature, precipitation, snow, freezing rain, atmospheric blocking, cyclones, and wind. The survey also includes cryospheric and biophysical impacts: sea ice rapid loss events, Greenland Ice Sheet melt, floods, drought, wildfire, coastal erosion, terrestrial ecosystems, and marine ecosystems. Temperature and sea

ice rank at the high end of the spectra of evidence for change and confidence in future change, while drought, flooding and cyclones rank at the lower end. Research priorities identified on the basis of this review include greater use of high-resolution models and observing system enhancements that target extreme events. There is also a need for further work on attribution, impacts on ecosystems and humans, and thresholds or tipping points that may be triggered by extreme events in high latitudes.

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Douglas, S., Ansell, C., Parker, C., Sørensen, E., 'T Hart, P. et al. (2020). [“Understanding Collaboration: Introducing the Collaborative Governance Case Databank.”](#) *Policy & Society: Journal of public, foreign and global policy*, 39(4): 495-509.

**Abstract:** Studying collaborative governance has become booming business. However, the empirical literature still struggles to produce robust generalizations and cumulative knowledge that link contextual, situational and institutional design factors to processes and outcomes. We still have not mustered the broad and deep evidence base that will really help us sort fact from fiction and identify more and less productive approaches to collaboration. The current empirical evidence in the study of collaborative governance consists chiefly of small-N case studies or large-N surveys. The challenge is to move from case-based, mid-range theory building to more large-N-driven systematic theory-testing, while also retaining the rich contextual and process insights that only small-N studies tend to yield. This article, and the articles in the accompanying special issue, introduces an attempt to provide this middle ground– the Collaborative Governance Case Database. The database has been developed to serve as a free common pool resource for researchers to systematically collect and compare high-quality collaborative governance case studies. This article is an introduction to the database, exploring its design, opportunities and limitations. This article is also an invitation; inviting all researchers to freely use the cases in the database for their own research interest and to help strengthening the database by adding new cases there are eager to share with colleagues.

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Vestby, J., Buhaug, H., von Uexkull, N. (2021). [“Why do some poor countries see armed conflict while others do not?: A dual sector approach”](#). *World Development*, 138

**Abstract:** Low level of GDP per capita is a robust and widely applied predictor of civil war. Yet, GDP is a crude macro-level indicator that masks considerable heterogeneity in economic structures, and it is less well able to explain variation in conflict risk among low-income countries. Here, we consider the merit of classic dual sector theory in improving common economic models of civil war. Two basic expectations are derived: the relative size of the traditional sector increases conflict risk via low opportunity cost and high share of immobile wealth, whereas high relative labor productivity (RLP) in the modern sector compared to the traditional sector facilitates labor mobility and wage growth, thus reducing the viability of rebellion. We evaluate these expectations via out-of-sample prediction analysis of civil conflict involvement, drawing on a unique 10-sector dataset of economic activity among 40 countries across the world since 1969. The analysis provides robust evidence that poor countries with a comparatively productive modern sector are less conflict prone than countries at similar income levels with lower RLP ratios. However, further probing into potential mechanisms producing this relationship does not provide decisive evidence in favor of any potential mechanism. We conclude that replacing GDP per capita with indicators of sector size and relative productivity improves the predictive performance of common civil war models, although more research is needed to assess the generalizability of these findings and to gain further insight into the underlying causal pathways linking relative labor productivity with reduced conflict risk.

Buhaug, H., Croicu, M., Fjelde, H., von Uexkull, N. (2020). [“A conditional model of local income shock and civil conflict.”](#) *Journal of Politics*.

**Abstract:** Common political economy models point to rationalist motives for engaging in conflict but say little about how income shocks translate into collective violence in some cases but not in others. Grievance models, in contrast, focus on structural origins of shared frustration but offer less insight into when the deprived decide to challenge the status quo. Addressing these lacunae, we develop a theoretical model of civil conflict that predicts income loss to trigger violent mobilization primarily when the shock can be linked to pre-existing collective grievances. The conditional argument is supported by results of a comprehensive global statistical analysis of conflict involvement among ethnic groups. Consistent with theory, we find that this relationship is most powerful among recently downgraded groups, especially in the context of agricultural dependence and low local level of development, whereas political downgrading in the absence of adverse economic changes exerts less influence on ethnic conflict risk.

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Hegre, H., Petrova, K., von Uexkull, N. (2020). [“Synergies and Trade-Offs in Reaching the Sustainable Development Goals.”](#) *Sustainability*, 12(20).

**Abstract:** The Sustainable Development Goals (SDGs) adopted in 2015 integrate diverse issues such as addressing hunger, gender equality and clean energy and set a common agenda for all United Nations member states until 2030. The 17 SDGs interact and by working towards achieving one goal countries may further—or jeopardise—progress on others. However, the direction and strength of these interactions are still poorly understood and it remains an analytical challenge to capture the relationships between the multi-dimensional goals, comprising 169 targets and over 200 indicators. Here, we use principal component analysis (PCA), an in this context novel approach, to summarise each goal and interactions in the global SDG agenda. Applying PCA allows us to map trends, synergies and trade-offs at the level of goals for all SDGs while using all available information on indicators. While our approach does not allow us to investigate causal relationships, it provides important evidence of the degree of compatibility of goal attainment over time. Based on global data 2000–2016, our results indicate that synergies between and within the SDGs prevail, both in terms of levels and over time change. An exception is SDG 10 ‘Reducing inequalities’ which has not progressed in tandem with other goals.

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Mach, K., Adger, W., Buhaug, H., Burke, M., Fearon, J. et al. (2020). [“Directions for Research on Climate and Conflict.”](#) *Earth's Future*, 8(7).

**Abstract:** The potential links between climate and conflict are well studied, yet disagreement about the specific mechanisms and their significance for societies persists. Here, we build on assessment of the relationship between climate and organized armed conflict to define crosscutting priorities for future directions of research. They 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.

von Uexkull, N., d'Errico, M., Jackson, J. (2020). [“Drought, Resilience, and Support for Violence: Household Survey Evidence from DR Congo.”](#) *Journal of Conflict Resolution* SAGE Publications Inc.

**Abstract:** The effects of climate variability and change on security are debated. While this topic has received considerable attention in both policy circles and academia, the microlevel pathways and conditions under which climatic shocks increase conflict risks are poorly understood. We suggest that household resilience provides one key to understanding these relationships. Using novel household survey data from two conflict-affected regions in Eastern Democratic Republic of the Congo, we study variation in the support for violence related to reported exposure to drought and resilience metrics. Using comprehensive multifaceted objective and subjective indicators of resilience, we find that less resilient respondents who report having experienced drought and associated losses are more likely to be supportive of the use of political violence. In contrast, our findings suggest that there is no general association between reporting drought exposure and support for violence.

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## CNDS UPCOMING EVENTS

**13 January 2021** - Deadline for [abstract submission to the European Geosciences Union \(EGU\) General Assembly](#), which attracts over 16,000 participants from more than 110 countries. The 2021 EGU “vEGU21: Gather online” will be held virtually on 19-30 April 2021. Several of conference sessions are being organized by CNDS fellows. [See list here.](#)

**20 January 2021** – Research seminar: Disaster vulnerability index and flood losses. CNDS PhD presentation by Elena Mondino, Uppsala University. Organizer: Lars Nyberg, Karlstad University.

**31 January 2021** - Deadline for submitting your CNDS Interdisciplinary Grant Application. CNDS provides an opportunity for Early Career Scientists (PhD students and postdocs) from CNDS partnering universities Uppsala University, Karlstad University and Swedish Defence University to apply for funding for interdisciplinary work within natural hazard and disaster science in efforts to encourage research activities that go beyond disciplinary boundaries.

**22 March 2021** – Research seminar (Zoom): GlobeLife event in collaboration with Karolinska Institute. Organizer: Giuliano di Baldassare, Uppsala University

**14 April 2021** – Research seminar (Zoom): Innovative research methods. Organizers: CNDS PhD candidates from Uppsala University, Karlstad University and Swedish Defence University. Contact person: Kristina Petrova, Uppsala University

**2 June 2021** – Research seminar: A multidisciplinary conversation about wildfires with stakeholders. CNDS PhD presentation by Åsa Davidsson, Karlstad University. Organizer: Daniel Nohrstedt, Uppsala University.

The CNDS Forum on Natural Hazards has been postponed again until after the summer of 2021.



## Reminders

- Please send your updates (new publications, conference participation, video footage, news items or any other exciting events we should share) to [Stephanie Young](#) or [Johanna Mård](#).
- Please remember to add your CNDS affiliation (and logo where appropriate) in your correspondences and publications. Example: Name, Department, University, “Centre of Natural Hazards and Disaster Science”



Keep the rest of us updated on what’s happening with your research and see what your colleagues are up to by visiting the [CNDS twitter account](#).

## Links to the CNDS units

- [Centre for Societal Risk Research \(CSR\)](#), Karlstad University
- [Centre for Societal Security](#), Swedish Defence University
- [Department of Earth Sciences](#), Uppsala University
- [Department of Government](#), Uppsala University
- [Department of Peace and Conflict Research](#), Uppsala University
- [Department of Engineering Sciences](#), Uppsala University
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