



CLIMATE CHANGE LEADING TO ARMED CONFLICT

There is considerable research indicating that climate change may indirectly lead to more armed conflict.

1°C

INCREASE IN
TEMPERATURE LED TO A
11.3% INCREASE IN
INTERGROUP
CONFLICTS IN 2015

40%

INTERSTATE WARS

IN THE PAST 60 YEARS TO NATURAL
RESOURCES

18

VIOLENT CONFLICTS SINCE
1990 FUELED BY THE
EXPLOITATION OF NATURAL
RESOURCES AND OTHER
ENVIRONMENTAL FACTORS

30.6

MILLION PEOPLE
DISPLACED ACROSS 135
COUNTRIES IN 2017, 60
PERCENT WERE AS A
DIRECT RESULT OF
DISASTERS

While it may be argued that a direct correlation between the two does not exist, climate change has been labeled as a 'threat multiplier', with its tendency to construct a causal chain resulting in the creation or exacerbation of conflict. It may serve as a catalyst for reduced food security, compromised livelihood of vulnerable factions and resource scarcity, which ultimately pave the way for conflict.

Motivation

Increasing evidence indicates that climate change is causally associated with collective violence, generally in combination with other causal factors (Climate change and collective violence, 2017)

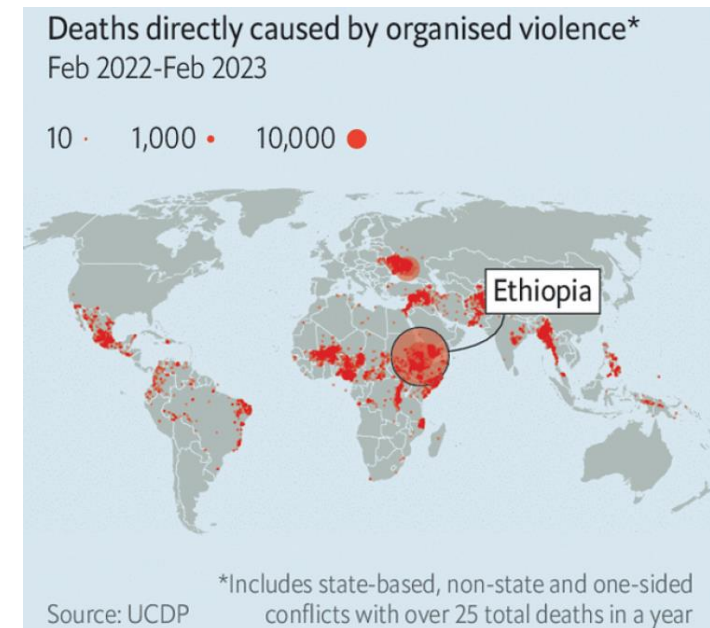
Many quantitative studies examined different **types of human conflict**, associated with different **climate variables**, at different **spatial** and **temporal scales**.

Climate change and collective violence

BS Levy, VW Sidel, [JA Patz](#) - Annual Review of Public Health, 2017 - [annualreviews.org](#)

... of **climate change** and the onset of collective **violence** cannot ... of collective **violence** induced by **climate change** can be ... to predict collective **violence** induced by **climate change** and ...

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“The weight of scientific evidence indicates that climate change is causally associated with collective violence. This evidence arises from individual studies over **wide ranges of time and geographic location**, and from two extensive meta-analyses. Complex pathways that underlie this association are not fully understood; however, increased ambient temperatures and extremes of rainfall, with their resultant adverse impacts on the environment and risk factors for violence, appear to play key roles.”

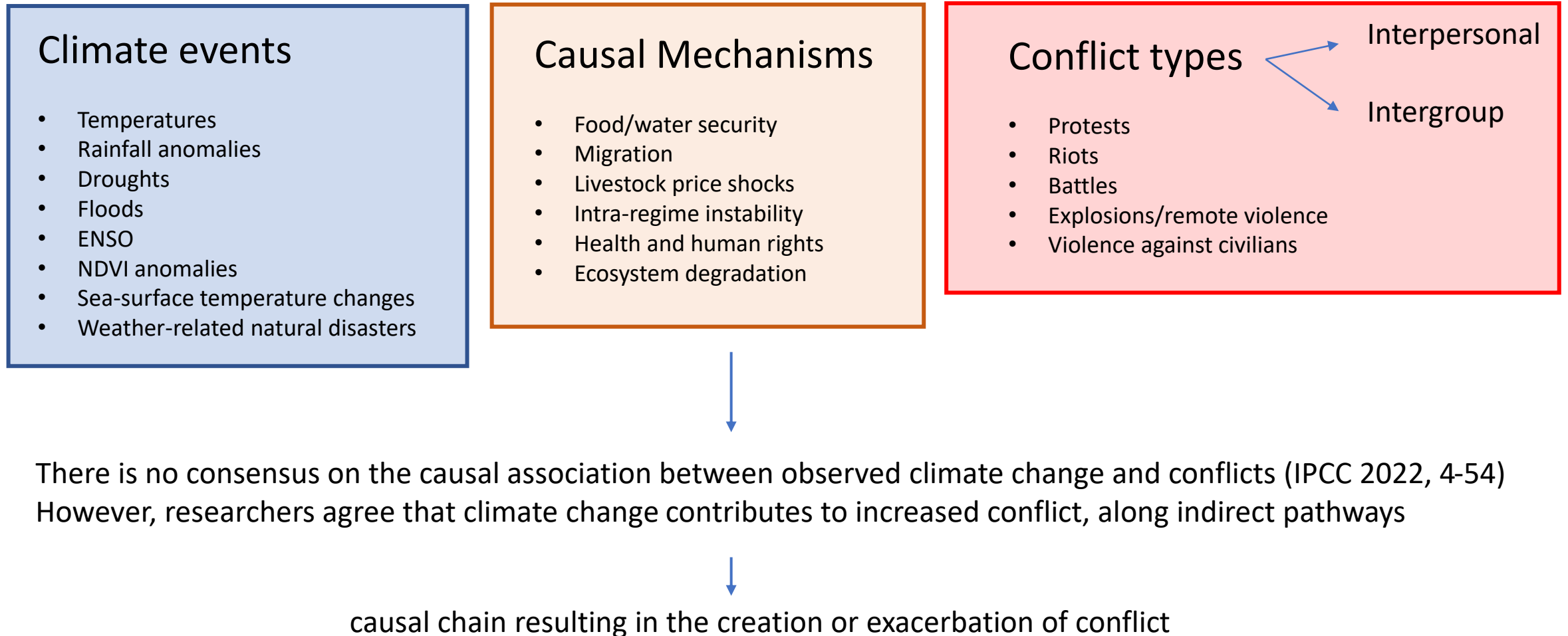
Collective violence caused by **climate change** and how it threatens health and human rights

BS Levy, VW Sidel - Health & Hum. Rts. J., 2014 - HeinOnline

... **climate change** causes or contributes to **collective violence** and the threats that this **violence** ... , prevention of **collective violence** due to **climate change**, and States' obligations to prevent ...

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Broad room for investigation



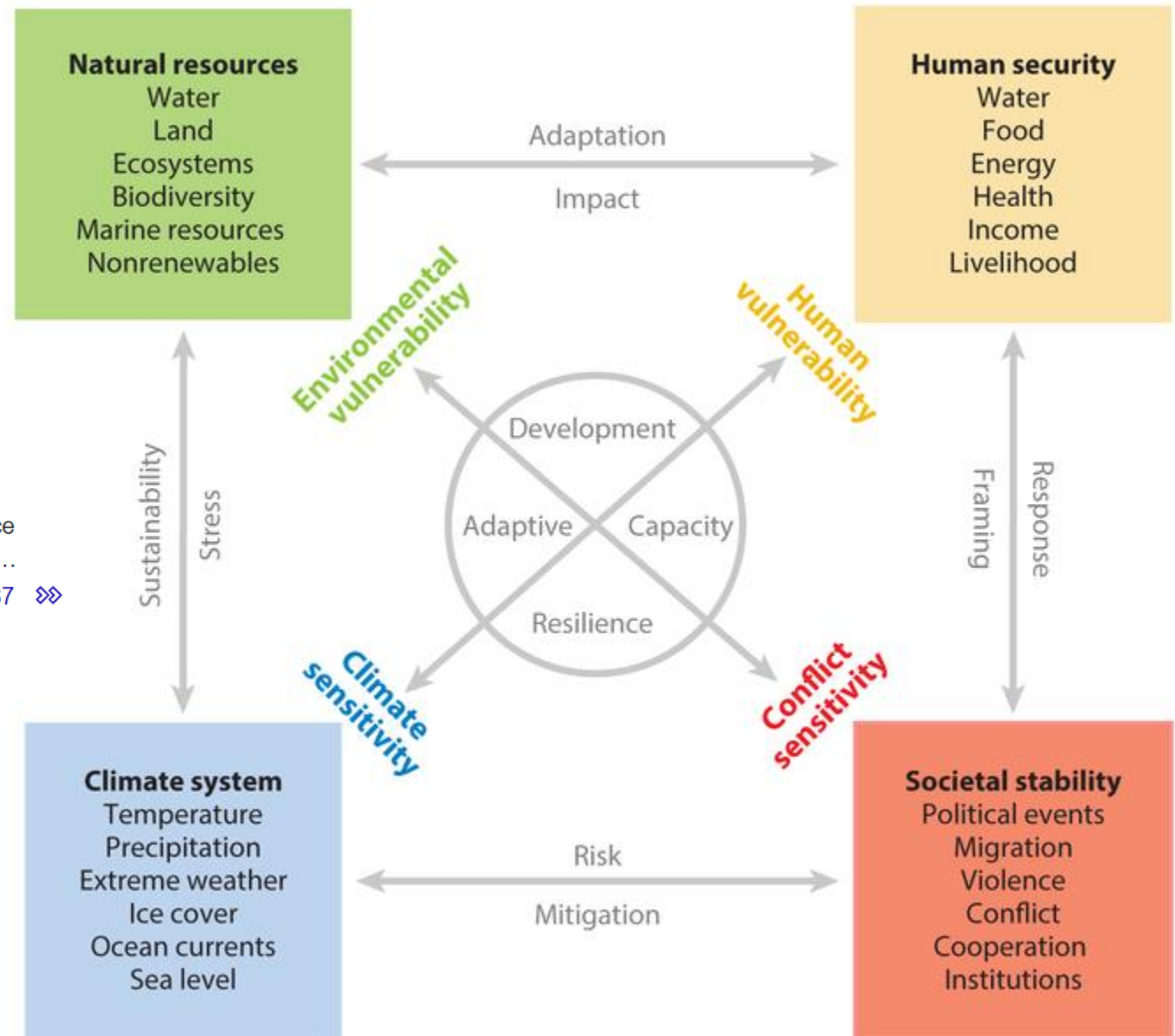
complex pathways connecting climate and conflict

Climate change and violent conflict

[J Scheffran](#), [M Brzoska](#), J Kominek, PM Link, J Schilling - Science, 2012 - science.org

... The widely used Armed **Conflict** Dataset of the Uppsala **Conflict** Data Program and the Peace Research Institute Oslo (UCDP-PRIO), for instance, sets a minimum of 25 battle-related deaths ...

☆ Salva Cita Citato da 403 Articoli correlati Tutte e 16 le versioni Web of Science: 187 »



Examples

- The **conflict in Sudan's Darfur** : correlation of **resource scarcity** due to rapid **desertification** and drought with the erosion of peaceful coexistence of the African and Arabic **agriculturist communities**.
- **Water scarcity** driven by climate change linked to the **civil war in Syria**
- Vanuatu witnessed a 300% increase in new **domestic violence cases**, reported by the Tanna Women's Counselling Centre, after two **tropical cyclones** hit the Western division of Fiji in 2012.
- A decade-long **drought** causing shrinkage of Lake Chad gave rise to confrontations and **competition between farmers**.
- Literature focusing on South Asia and South-East Asia categorize the regions as being greatly affected by both climate change and conflict.
- **Floods** were seen to augment the support and strength of the Islamist group Jamaat-ud-Dawa in Pakistan.
- In conflict-ravaged nations such as Yemen and Somalia, devastating floods and droughts kill hundreds of people and force tens of thousands to **migrate** from their homes.

	PRO	CONS
Case studies	More accurate	Not robust to generalization, complex to be parametrized
General models	Generality	Difficult to be applied to single cases due to the high variability of situations (useless)

Meta Analysis



Climate and conflict

[M Burke](#), [SM Hsiang](#), [E Miguel](#) - Annu. Rev. Econ., 2015 - [annualreviews.org](#)

... , we carry out a hierarchical Bayesian **meta-analysis** that both allows us to estimate the mean effect of **climate** variation on **conflict** outcomes and quantifies the degree of variability in ...

☆ Salva Cita Citato da 731 Articoli correlati Tutte e 20 le versioni >>

Quantifying the influence of **climate** on human **conflict**

[SM Hsiang](#), [M Burke](#), [E Miguel](#) - Science, 2013 - [science.org](#)

... a role in the publication of a specific **analysis**, there are multiple reasons why publication ... the literature on **climate** and **conflict**. First, we include working papers in our **analysis** (as is ...

☆ Salva Cita Citato da 1906 Articoli correlati Tutte e 36 le versioni >>

Catastrphic **climate events** as well as deviations from normal precipitation and temperatures lead to **resource scarcity**



This causes **migration** and the emergence of new conflicts, or it triggers existing, latent **conflicts**



This relationship is apparent across **all spatial scales and temporal scales**

- **Cross-sectional approaches** (populations inhabiting different locations are assumed to be identical)
- **Times-series variation** (single population is both the control and the treatment population)
- Use **natural experiments** : variations in climate over time that are independent of other variables that also affect conflict.

Meta Analysis



[HTML] [One effect to rule them all? A comment on **climate** and **conflict**](#)

[H Buhaug, J Nordkvelle, T Bernauer, T Böhmelt...](#) - Climatic Change, 2014 - Springer

... The updated **meta-analysis** with all three modifications implemented is ... on **climate** variability and civil **conflict**. Recent studies disagree not only on the magnitude of the impact of **climate** ...

☆ Salva Cita Citato da 308 Articoli correlati Tutte e 25 le versioni

[HTML] [Reconciling **climate-conflict meta-analyses**: reply to Buhaug et al.](#)

[SM Hsiang, M Burke, E Miguel](#) - Climatic Change, 2014 - Springer

... lagged effects of **climate** to obtain the cumulative effect of the **climate** across both periods, ... when there may be temporal displacement of **conflicts** between periods (egp 561 in Greene ...

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Problems :

- Can statistical relationships be interpreted causally?

Results :

- The **effect of temperature** is generally larger than the effect of rainfall
- The effect on **intergroup violence** is larger than the effect on interpersonal violence.
- Warmer temperatures, lower or more extreme rainfall, or warmer El Niño– Southern Oscillation (ENSO) conditions lead to an increase in the conflict

Weather-related natural disasters

[HTML] **Weather extremes, disasters, and collective violence: Conditions, mechanisms, and disaster-related policies in recent research**

[M Brzoska](#) - Current Climate Change Reports, 2018 - Springer

... Summary of research on the consequences of **extreme weather** events, which manifest themselves as **disasters**, for **collective** violence as well as on policy measures to mitigate such ...

☆ Salva Cita Citato da 33 Articoli correlati Tutte e 5 le versioni Web of Science: 18



- Extreme events are **rarely triggers** but more often accelerators of dynamics that are already developing.
- The increased likelihood of the initiation of collective violence seems to be primarily driven by **droughts** in **ethnically divided societies**.
- For other forms of disasters, as well as droughts in societies not marked by ethnic conflict, research has not come to clear results.
- **Lower-level violence**, particularly food riots, is **more likely to be related to climate extremes** than armed conflict.

Migration and climate change

[HTML] **Climate, conflict and forced migration**

[GJ Abel](#), [M Brottrager](#), [JC Cuaresma](#)... - Global environmental ..., 2019 - Elsevier

... Our **analysis** assesses quantitatively the **climate-conflict**-migration ... **analysis**, explicitly assesses the biases that may be implied by the lack of random selection in the outbreak of **conflict** ...

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Examines the causal link between climate, conflict and forced migration

- Climate change-induced migration promotes conflict in migrant receiving areas.
- **Climatic conditions**, by affecting drought severity and the likelihood of armed conflict, played a significant role as an **explanatory factor for asylum seeking** in the period 2011–2015.
- Particularly relevant for countries in Western Asia in the period 2010–2012.
- The impact of climate on conflict and asylum seeking flows is **limited to specific time period and contexts**.

Migration and climate change

[\[HTML\] Climate change-induced migration and violent conflict](#)

R Reuveny - Political geography, 2007 - Elsevier

... **climate change-induced migration** to conflict This section argues that **climate change-induced migration** can promote conflict in areas receiving **migrants**, the intensity of which may vary ...

☆ Salva  Cita Citato da 1357 Articoli correlati Tutte e 5 le versioni 

People living in **lesser developed countries** may be more likely to leave affected areas, which may cause conflict in receiving areas

[\[HTML\] Flood-induced displacement and civil conflict](#)

R Ghimire, S Ferreira, JH Dorfman - World Development, 2015 - Elsevier

... and can lead to mass **displacement** from affected areas. The ... impact of the **displacement** induced by large **floods** on civil ... that while the **displacement** caused by large **floods** did not ...

☆ Salva  Cita Citato da 119 Articoli correlati Tutte e 6 le versioni

- Analysis of the role of large **floods** on the onset and prevalence of internal armed conflict.
- Focus on the displacement induced by floods as a determinant of armed conflict.

[The determinants of environmental migrants' conflict perception](#)

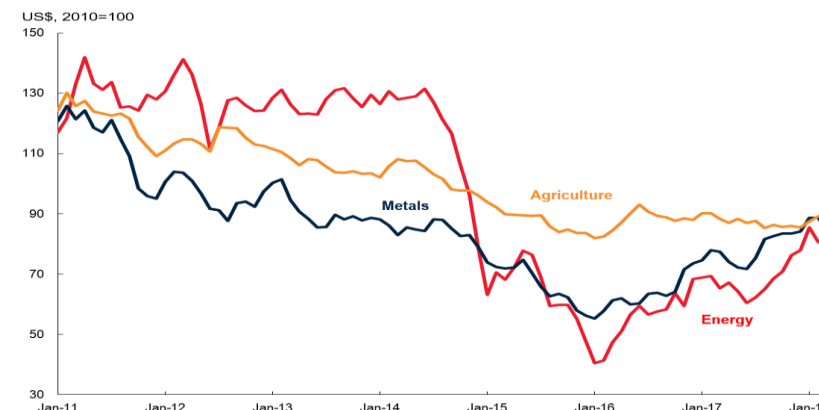
V Koubi, T Böhmelt, G Spilker, L Schaffer - International Organization, 2018 - cambridge.org

... migration and **conflict** at the micro level. In particular, we focus on environmental migrants' **conflict perceptions**. We contend that variation in migrants' **conflict perception** can be ...

☆ Salva  Cita Citato da 55 Articoli correlati Tutte e 14 le versioni

Environmental migrants who suffer from environmentally induced grievances are more likely to perceive conflict and challenges in their new locations

Economy and livestock price shocks



Economic **shocks** and **conflict**: Evidence from commodity **prices**

[S Bazzi](#), [C Blattman](#) - American Economic Journal: Macroeconomics, 2014 - aeaweb.org

... Local **climate shocks** cannot speak to state-level mechanisms... **price shocks** can help test the strength of any income**conflict** ... UCDP/PRIO and **COW** measures are theoretically most ...

☆ Salva Cita Citato da 596 Articoli correlati Tutte e 10 le versioni Web of Science: 189 »»

Extreme weather and civil war: Does drought fuel **conflict** in Somalia through **livestock price shocks**?

[JF Maystadt](#), [O Ecker](#) - American Journal of Agricultural ..., 2014 - Wiley Online Library

... **climate** change mitigation and **conflict** prevention policies (104). ... and more vulnerable to market **shocks** after the collapse of the ... **livestock price shocks** are a main driver of local **conflict**. ...

☆ Salva Cita Citato da 357 Articoli correlati Tutte e 18 le versioni Web of Science: 136 »»

Is this relationship causal?

Three theories linking income to conflict are tested with new **data on export price shocks**

Drought affects conflict through **livestock price changes**, establishing livestock markets as the primary channel of transmission in Somalia.

Local warming - temperatures



[HTML] **Local warming and violent armed conflict** in Africa

[S van Weeze](#) - World Development, 2020 - Elsevier

... is the link between **conflict** incidence and climatic conditions at the **local** level between 2003 ... variation in **conflict**, climate, and a number of other possible **conflict** determinants such as ...

☆ Salva Cita Citato da 30 Articoli correlati Tutte e 5 le versioni

Local warming and violent conflict in North and South Sudan

[JF Maystadt](#), [M Calderone](#), [L You](#) - Journal of Economic ..., 2014 - academic.oup.com

... **conflict** in Sudan. We estimate at the pixel level the relationship between **local warming** and **violent conflict** ... We also project the changes in **violent conflict** by 2030 under different climate ...

☆ Salva Cita Citato da 118 Articoli correlati Tutte e 18 le versioni

- It uses **long term changes in local climate** to proxy climate change, rather than using weather variation.
- Estimates not robust to adjustment for country-level factors such as institutional quality or colonial history.

Competition over natural resources, in particular water, is the main driver of such relationship in a region where pastoralism constitutes the dominant livelihood

Food/water security



Reflections on the **Nexus between Climate Change, Food Security and Violent Conflicts**: A Tour through the **Nigeria** Experience

[K Omoyajowo](#), [K Omoyajowo](#)... - ... and **Balanced Use of** ..., 2022 - [ebzr.nung.edu.ua](#)

... show the **relationship between climate change, food security and violent conflicts** in **Nigeria**, the ... reforms, academia, and the public on **climate change** issues and to identify the areas of ...

☆ Salva 77 Cita Articoli correlati Tutte e 4 le versioni 77

[HTML] **Impact of the Russia–Ukraine armed conflict on water resources and water infrastructure**

[O Shumilova](#), [K Tockner](#), [A Sukhodolov](#)... - *Nature* ..., 2023 - [nature.com](#)

... the **conflict**. We discuss the key challenges that the **water** sector of Ukraine is facing due to the **armed conflict** and provide a retrospective view on previous catastrophes within the **water** ...

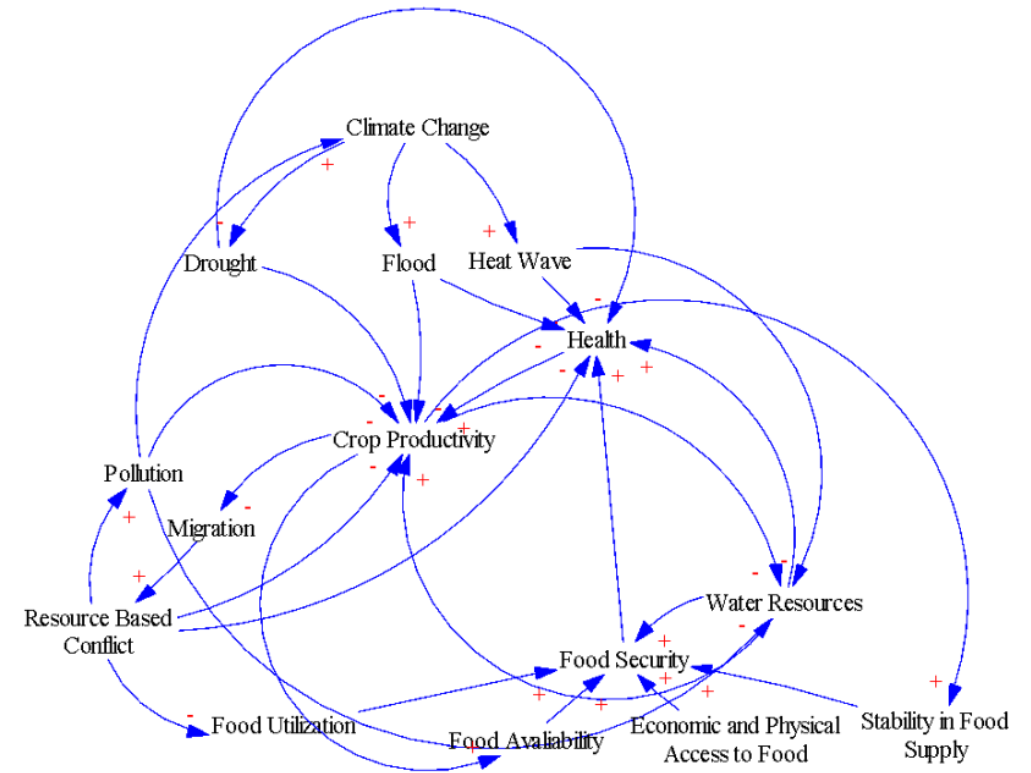
☆ Salva 77 Cita Citato da 2 Tutte e 4 le versioni Web of Science: 1 77

[HTML] **Water scarcity, climate adaptation, and armed conflict**: insights from Africa

[PM Regan](#), [H Kim](#) - *Regional Environmental Change*, 2020 - [Springer](#)

... **Water** is a resource for which we have a reasonably strong empirical ... link to **armed conflict** and cooperation (eg, **Water Conflict** Chronology Database) or interstate **conflict** over **water** (eg...

☆ Salva 77 Cita Citato da 13 Articoli correlati Tutte e 5 le versioni Web of Science: 6 77



Analysis of the impacts of the military actions on freshwater resources and water infrastructure during the conflict

- They empirically examine the effects of climatic conditions on the probability of armed conflict in Africa.
- There are close links between climate drivers and armed conflict.
- Greater levels of **adaptive capacity** lead to a lower likelihood of armed conflict.

Health and human rights



Collective violence caused by climate change and how it threatens health and human rights

BS Levy, VW Sidel - Health & Hum. Rts. J., 2014 - HeinOnline

... to **collective violence** and the threats that this **violence** poses to health and **human rights**. In ... , prevention of **collective violence** due to climate change, and States' obligations to prevent ...

☆ Salva Cita Citato da 38 Articoli correlati Tutte e 18 le versioni Web of Science: 16

[HTML] Climate change, human rights, and social justice

BS Levy, JA Patz - Annals of global health, 2015 - Elsevier

... the global frequency of **collective violence**, which includes war and other forms of armed conflict, state-sponsored **violence** (such as genocide and torture), and organized **violent** crime (...)

☆ Salva Cita Citato da 377 Articoli correlati Tutte e 8 le versioni Web of Science: 159

Collective violence due to climate change poses serious **threats to health and human rights**:

- directly by causing morbidity and mortality
- indirectly by causing damage to the health-supporting infrastructure of society, forcing people to migrate, damaging the environment, and diverting human and financial resources

The environmental and health consequences of climate change, which **disproportionately affect low-income countries** and poor people in high-income countries, profoundly affect human rights and social justice.

Local institutions, ethnic groups



Climate change, violent conflict and local institutions in Kenya's drylands

WR Adano, [T Dietz](#), K Witsenburg... - Journal of peace ..., 2012 - journals.sagepub.com

... or **violent conflict**. This article shows the outcome of an enquiry into the relationship between **climate** ... political) and social interactions between **ethnic groups**. The article seeks to answer ...

☆ Salva Cita Citato da 365 Articoli correlati Tutte e 17 le versioni Web of Science: 152

Case studies on **livelihood and poverty** can shed light on how violence manifests as collective action or individual decisions, and how specific climatic conditions may inform or explain such violence.

Armed-conflict risks enhanced by climate-related disasters in ethnically fractionalized countries

[CF Schleussner](#), [JF Donges](#)... - Proceedings of the ..., 2016 - National Acad Sciences

... This prominent role of **ethnicity** in **conflicts** might ... **ethnic** lines (19), as well as to a high and rapid **ethnic** mobilization potential (20) arising from geographical clustering of **ethnic groups** ...

☆ Salva Cita Citato da 374 Articoli correlati Tutte e 15 le versioni Web of Science: 171

Ethnic divisions often fuel armed conflicts worldwide, particularly when societal tensions rise rapidly due to events like **natural disasters**.

Characteristics of societies

Societies differ with respect to environmental vulnerability, coping capacity and ability to adapt, and also with respect to exogenously defined drivers of latent conflict risk.

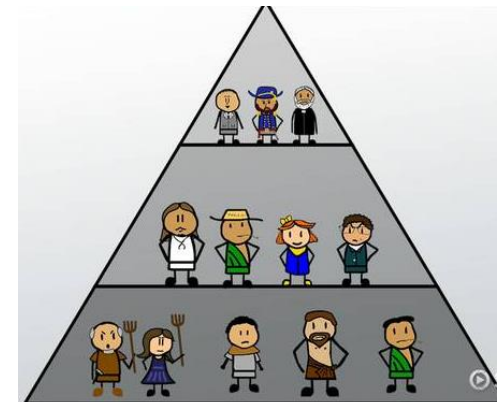
Characteristics of societies :

- population types
- population size
- ethnic composition
- ecological diversity
- economic performance
- extent of democratic institutions



Which segments of society are affected :

- Farmers
- pastoralists
- urban poor
- political elite
- ...



Particular socio-economic situations

Environmental and socioeconomic data
used to explain conflict phenomena

- drug trafficking
- political crises in oil-dependent economies
- population growth and urbanization cause pressure on limited land resources

[HTML] Combining **environmental** and **socioeconomic data** to understand determinants of conflicts in **Colombia**

S Fiandrino, [C Cattuto](#), [D Paolotti](#)... - *Frontiers in big Data*, 2023 - ncbi.nlm.nih.gov

... In the first stage of the analysis, we focus on **environmental** and **socioeconomic data** to explain conflict phenomena. Then, we consider the autoregressive component to check whether ...

☆ Salva  Cita Tutte e 5 le versioni

[HTML] Climate change: A driver of future **conflicts** in the Persian Gulf Region?

[AN Beni](#), [N Marriner](#), [A Sharifi](#), [J Azizpour](#), [K Kabiri](#)... - *Heliyon*, 2021 - Elsevier

... related policies in degrading the **environment** and its **socio-economic** impacts in the PGR, ... **data**. The results show that the countries of the PGR pursue some types of **socio-economic** ...

☆ Salva  Cita Citato da 12 Articoli correlati Tutte e 12 le versioni

[HTML] Spatial-temporal pattern of land use **conflict** in China and its multilevel driving mechanisms

S Jiang, J Meng, [L Zhu](#), H Cheng - *Science of the Total Environment*, 2021 - Elsevier

... However, a lot of **socio-economic data** used in the evaluation is difficult to acquire at the national level, such as agricultural subsidies, town development orientation, land use planning, ...

☆ Salva  Cita Citato da 49 Articoli correlati Tutte e 5 le versioni 

Policy responses

The identification of key drivers of violence is crucial to have evidence to inform subnational governments and to support the decision-making policies that could assess targeted policy options.

Natural disasters, forced migration, and conflict: The Importance of government policy responses

[SML Mitchell, E Pizzi](#) - *International Studies Review*, 2021 - [academic.oup.com](#)

... Table 1 provides case illustrations for each **policy response** type discussed in this section. ... on government **policy responses** to environmental shocks (especially for the most **disaster**-...

☆ Salva Cita Citato da 14 Articoli correlati Tutte e 5 le versioni Web of Science: 3

Analysis of government policies to identify trigger situations where disasters and migration are most likely to produce violence

[PDF] Science–policy dimensions of research on climate change and conflict

[KJ Mach, CM Kraan](#) - *Journal of Peace Research*, 2021 - [journals.sagepub.com](#)

A large body of research now indicates that climate likely matters for conflict. This climate–conflict scholarship, however, has involved divergent findings, sometimes strident ...

☆ Salva Cita Citato da 17 Articoli correlati Tutte e 4 le versioni

The climate–conflict relationship has involved divergent findings, sometimes strident disagreement



Drought, migration, and conflict in sub-Saharan Africa: what are the links and policy options?

[S Adaawen, C Rademacher-Schulz, B Schraven...](#) - *Current Directions in ...*, 2019 - Elsevier

... , **drought**-related farmer–herder **conflicts** ... **conflicts** and human insecurity on the African continent. However, this chapter suggests that the link between **drought**, migration and **conflict** is ...

☆ Salva Cita Citato da 30 Articoli correlati Tutte e 3 le versioni

limits the usability of the research for policymakers and practitioners

Gridded data set

Conflict, climate, and cells: a disaggregated analysis

[M Harari](#), [EL Ferrara](#) - Review of Economics and Statistics, 2018 - [direct.mit.edu](#)

... **cell** experiences at least one **conflict** event during the year as a function of contemporaneous and lagged SPEI and spatial and temporal lags of **conflict**... **conflict** propensity relative to a **cell**...

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Disaggregated empirical analysis of civil conflict at the subnational level in Africa over 1997 to 2011 using a new **gridded data set**.

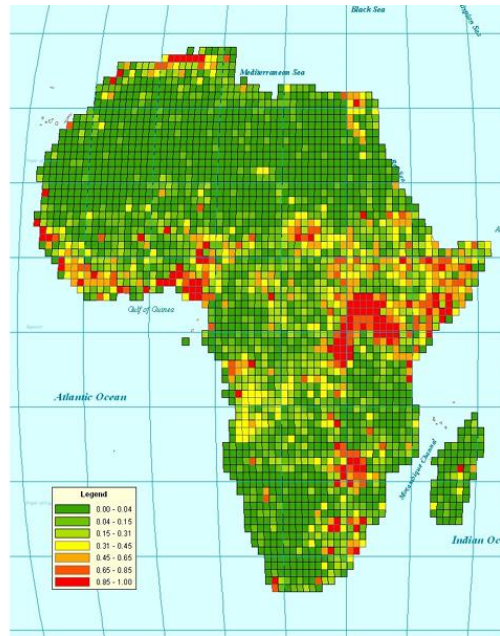


Figure 1A:

Fraction of years with at least one conflict event (1997-2011)

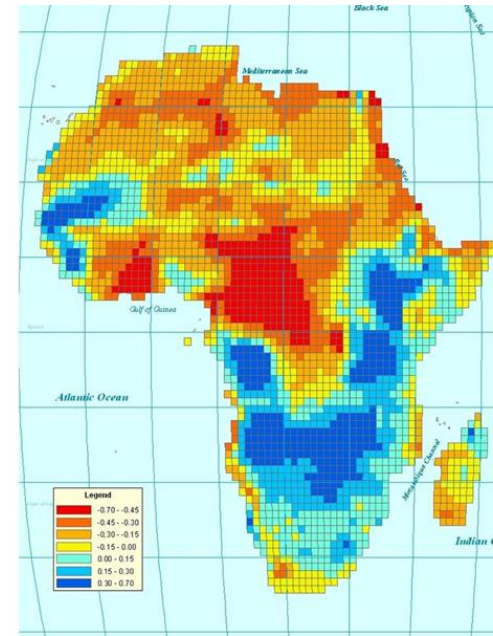


Figure 1B:

Average SPEI (1997-2011)

Standardized Precipitation-
Evapotranspiration Index

Climate change–cooperation connection



[HTML] **Climate change** induced migration and the evolution of **cooperation**

[S Dhakal](#), [R Chiong](#), [M Chica](#), [RH Middleton](#) - *Applied Mathematics and ...*, 2020 - Elsevier

... We study the impact of **climate change** induced migration on the evolution of **cooperation** using an N-... as well as **connections** in their social network. We also explore the effectiveness of ...

☆ Salva Cita Citato da 8 Articoli correlati Tutte e 3 le versioni Web of Science: 7

- One of the first to study climate change induced migration using **evolutionary game theory**
- Impact of climate change induced migration on the evolution of cooperation using an *N*-player social dilemma game

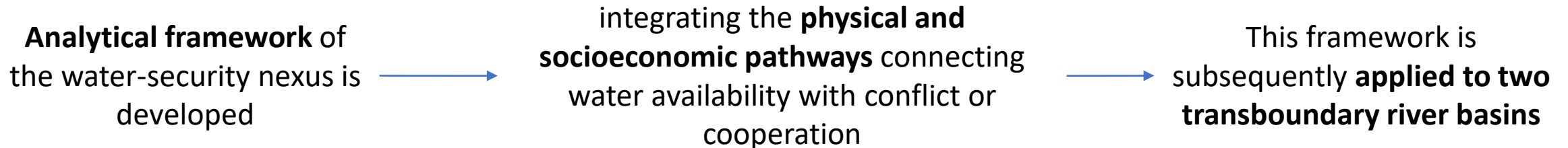
Conflict and **cooperation** in the water-security nexus: a global comparative analysis of river basins under **climate change**

[PM Link](#), [J Scheffran](#), [T Ide](#) - *Wiley Interdisciplinary Reviews ...*, 2016 - Wiley Online Library

... literature on conflict and **cooperation** in transboundary river ... in times of **climate change** necessitates the inclusion of more ... **connecting** water availability with conflict or **cooperation**. This ...

☆ Salva Cita Citato da 67 Articoli correlati Tutte e 4 le versioni Web of Science: 31

No simple relationship between freshwater availability and violent conflict.



COVID-19

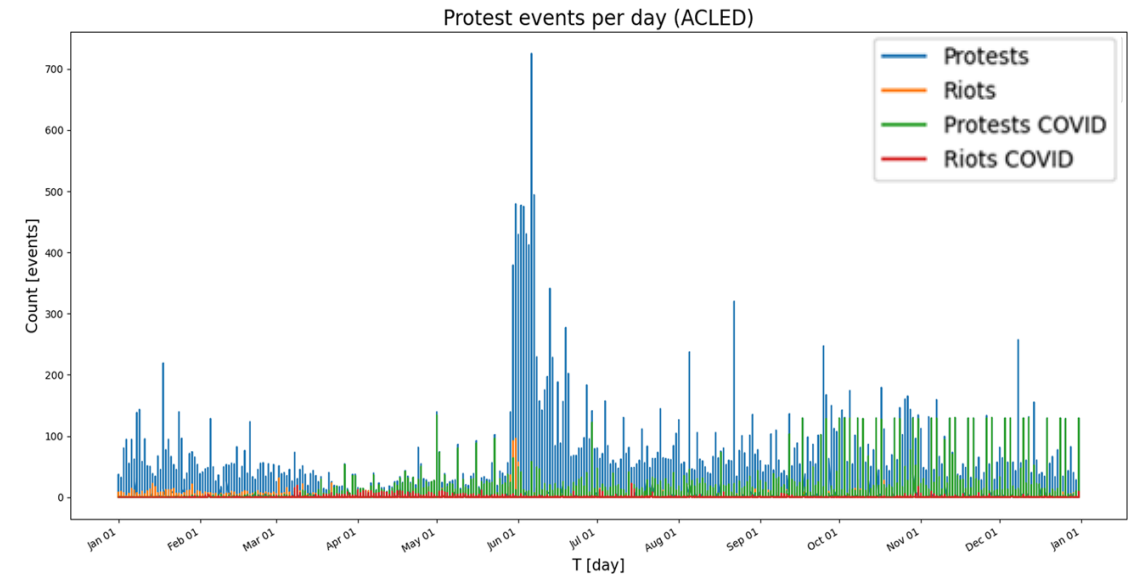
- The uncertainty about the effects of a pandemic spreads fear amongst people
- The **containment measures** impose large-scale behavioral changes, and place a psychological burden on individuals
- Interactions between individuals ensure that **individual perceptions can spread**, which leads to the emergence/amplification of tensions at societal level.

This resulted in several **civil resistance movements** against governmental institutions.

Beyond Covid-19:

During the outbreak of **EBOLA** and **SARS** in West-Africa and Canada, similar patterns of protests and stigmatization were observable in West-Africa and Canada

Protests and riots linked to the COVID-19 pandemic



Protests and Covid-19



Protest in unlikely times: Dynamics of collective mobilization in Europe **during** the **COVID-19** crisis

[H Kriesi](#), [IE Oana](#) - Journal of European public policy, 2023 - Taylor & Francis

... **protest** in reaction to the crisis is also likely to have varied across countries. We study the extent and intensity of **protest** across 31 European countries in the **COVID**... to what extent **protest** ...

☆ Salva Cita Citato da 7 Articoli correlati Tutte e 3 le versioni

[HTML] Emergence of **protests** during the **COVID-19** pandemic: quantitative models to explore the contributions of societal conditions

[K van der Zwet](#), [Al Barros](#), [TM van Engers](#)... - Humanities and Social ..., 2022 - nature.com

... the emergence of **protests** in the context of the **COVID-19** ... that lead to the emergence of **protests**. These conditions and ... we compare the **protest** dynamics of 27 countries **during** the ...

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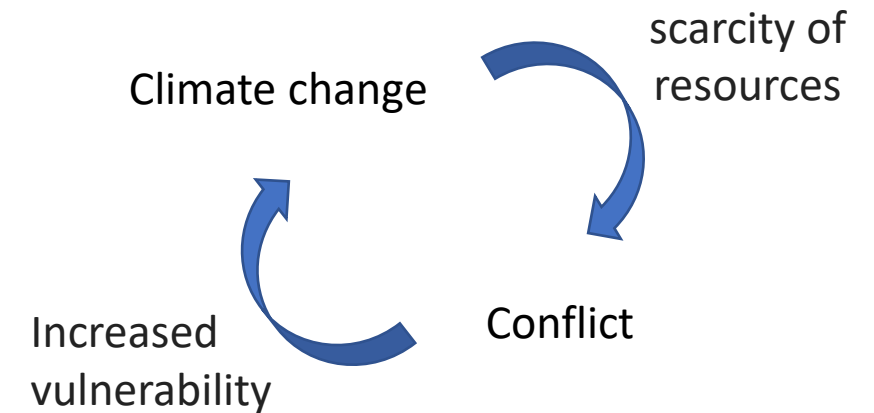
Protests didn't stop to occur, but they did at significantly **lower levels** compared to pre-COVID times, in terms of :

number of events number of participants

- Identify key conditions that lead to the emergence of protests.
- These conditions and underlying relations are captured in a **causal loop diagram** to conceptualise the emergence of civil resistance.
- compare the protest dynamics of 27 countries during the pandemic

Inverse relation : conflict exacerbates the effects of climate change

- By means of **environmental and socio-economic degradation**, conflict can increase **societies' vulnerability to climate change**.
- The changes occur within natural, social, and economic systems, which may generate complex and unpredictable sequences of events.



(Climate Change as a Driver for Armed Conflict, Zahra Ali Imran 2021)

DATASETS



MIGRATION DATA PORTAL
The bigger picture



United Nations

Population Division

International Migration Flows



ACLED

Bringing clarity to crisis

UCDP

Uppsala Conflict Data Program
ucdp.uu.se



EM-DAT

The International Disaster Database

Centre for research on the Epidemiology of Disasters — CREDES



vam

food security analysis

A few research questions

- How does **climate change/extreme weather** events affect **migration/conflicts/protests**?
- What is the **causal chain** linking climate and conflicts in a specific region?
- By exploring the link among environment/climate variables, **socioeconomic** and conflict data, is there a certain set of circumstances for conflict to trigger? And how much do these variables influence conflicts?
- Is it possible to identify pockets of **vulnerability**/conflict areas using historical data?
- What are the mayor **drivers of conflict** in a certain area?
- What is the connection between **climate change and cooperation**?
- Is conflict triggered by resource **abundance or degradation**? Does societal stability depend on natural resources?
- How did Covid affect the presence of protests around the world?
- What is the relationship between societal conditions and the emergence of **protests** in the context of the **COVID-19** pandemic? Can we build a **causal loop diagram**?
- **Inverse relation** : does conflict exacerbate the effects of climate change? Will societal stability lead to climate mitigation?
- Does the **increase in** (food/grain) **prices** following heatwaves/natural disasters/epidemics **trigger social unrest**?

Increase in food prices and social unrest

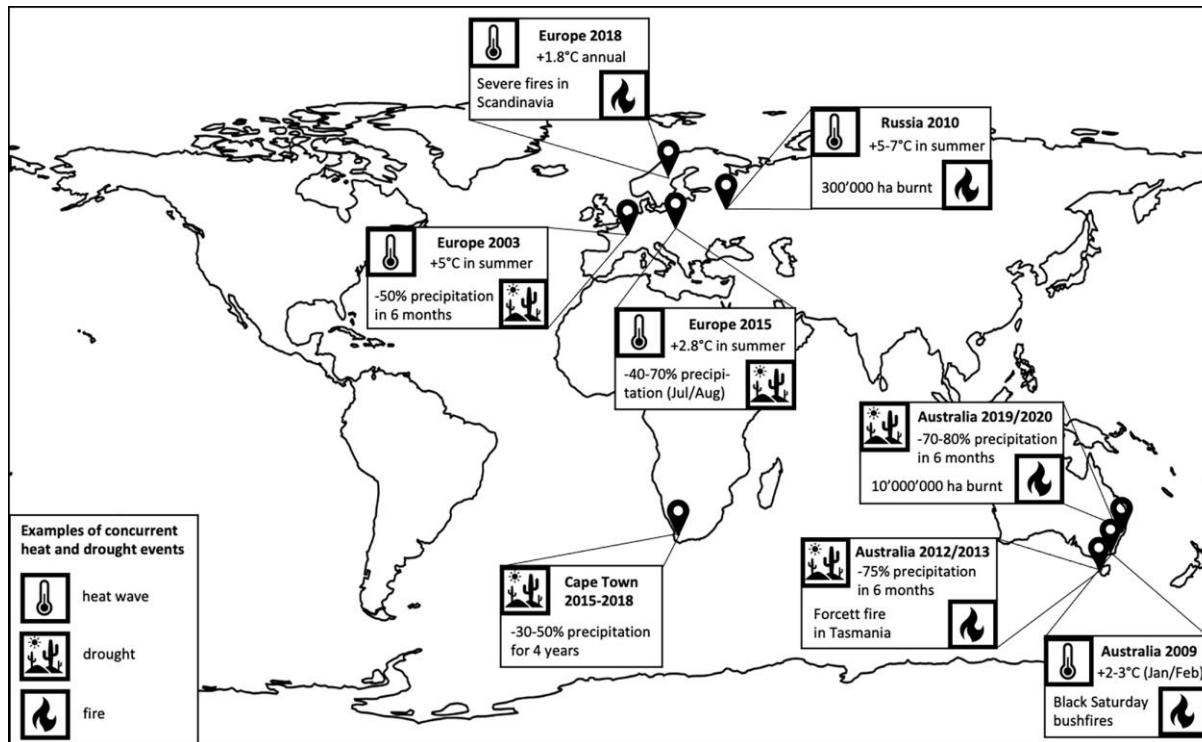
Rising food prices, food price volatility, and social unrest

MF Bellemare - american Journal of agricultural economics, 2015 - Wiley Online Library

... According to Walton and Seddon, even though **food riots** had largely disappeared from the **political** landscape after the middle of the 19th century, they reappeared in the 1970s as a ...

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This article studies the **impact of food prices** – food price levels as well as food price volatility – **on social unrest**. Because food prices and social unrest are jointly determined, **data on natural disasters are used to identify the causal relationship** flowing from food price levels to social unrest.



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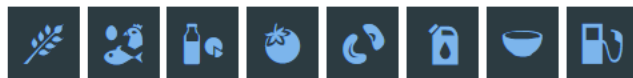
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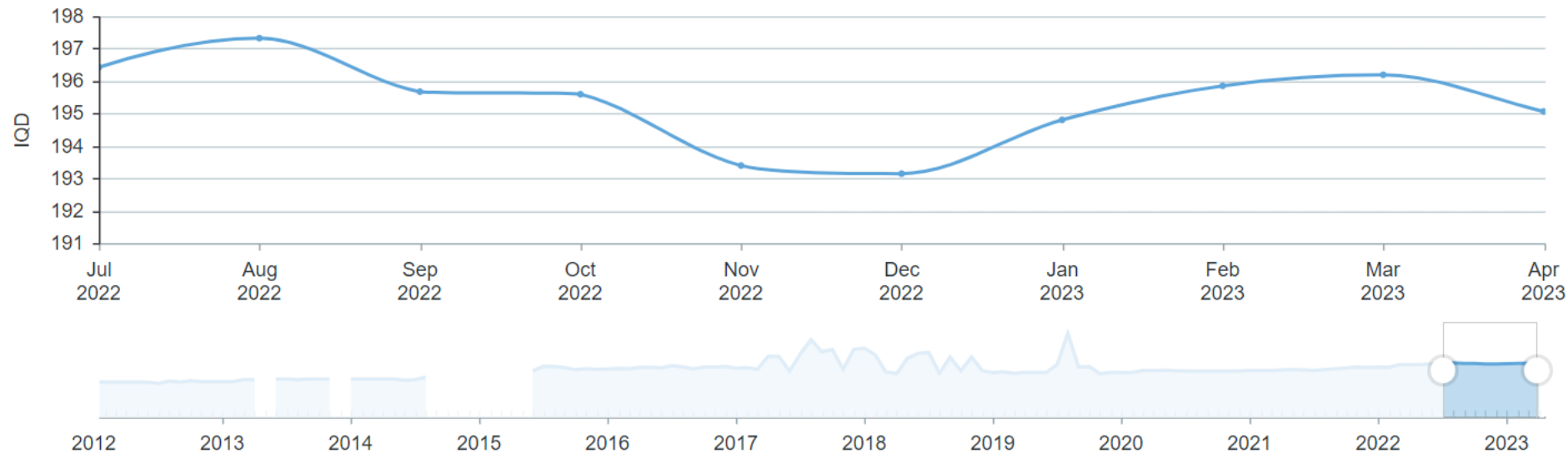
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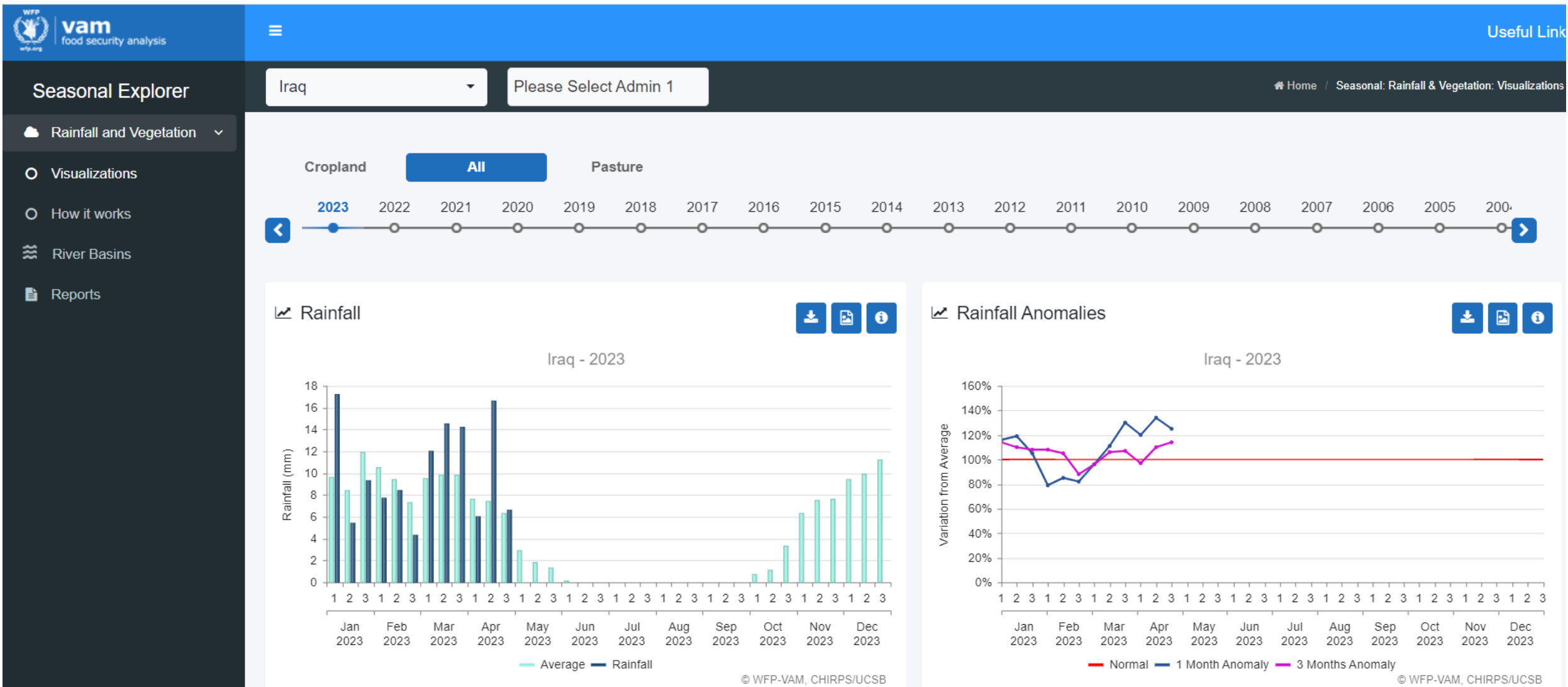
1 Year

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Rainfall, Rainfall anomalies, NDVI, NDVI anomalies, Rainfall & NDVI, Rainfall & NDVI anomalies