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Case Study:

An investigation of the relationships between conflict, food price and climate across Africa

The author argues that climate change, food prices and conflict all have inter-linkages with each other, and is also evident in any closed system. Initially the link between food price and conflict is analysed. Higher food price leads to an increase in conflicts within markets, and also conflicts can increase food prices in markets. A feedback link is identified between the two. This link is clearly evident when unstable or weaker states are put under the lens. Higher food prices would result in poorer households spending the majority of their income on food alone, which could lead to political unrest, riots and protesting of the inability of the government to provide basic amenities. Climate change leads to an increase in food prices by affecting agriculture. Even today a majority of farms rely solely on precipitation for irrigation, and in such a scenario, lack of it would have an adverse impact on the pricing of the commodities in the local market. Climatic changes such as droughts, floods, etc would all have similar effects on food prices, which would, in turn, increase the risk of conflict in those areas. About 65 per cent of the African population is employed in agriculture, so when changes in rainfall would have a negative effect on the economy as well, which the authors suggest can lead to civil wars as it increases the grievances of the “local young men”.

So the key argument which the authors lay out is that climate, food price and conflict have a conditional, interactive and sequential relationship between each other. Climate has an effect on both food price and conflict, whereas food price and conflict have an effect on each other. More technically, climate change can create conditions in which there is an increase in the risk of conflict by making common resources scarce and increasing competitions for them, and also increase food prices by reducing the potential harvest due to lack of precipitation. Conflict can create conditions in which food prices increases (by increasing risks of transportation, food riots, hoarding), and food prices can also escalate chances of conflict by creating conditions of tension in the market or by weakening the economy.

Upon this framework, their findings reveal four facets of the interlinkages of climate, prices and conflict.

- Higher rates of conflict are expected in markets with higher food prices
- Violence raises the average price of commodities in markets
- Anomalously dry conditions are associated with increased frequencies of conflict
- Decreased rainfall exerts an indirect effect on conflict through its impact on commodity prices

The evidence provided by the authors to reach to these four findings, in my opinion, is conclusive, but also conditional. I believe it is conditional because to observe these effects, the nation-states where these correlations are being observed should be “weak”, else their capacity to mitigate or repress these effects could be significant and the correlation may not show up even if there were any repercussions.

The authors analysed about 113 different markets in 24 different nation-states of Africa, between 1997 to 2010. So the dataset is of 11,659 administrative months. Many of the analysed nation-states had civil wars during this period, so it can be assumed that those nation-states failed to control the effects that these three variables exert on each other. So when exclusively considering these three factors, I believe the dependencies found in this paper are indeed accurate. And from what I've learnt from my Statistics class is that when a large amount of data is analysed, due to statistical regularity any observed co-relation is in fact with a very high probability true. The time frame of this data is of considerable size, coupled with the variety of different countries in respect to economic, social and political scene is also high, so the results are unlikely to be skewed towards any particular area.

So when a nation-state finds one of these factors (climate, prices, conflict) out of the normal, they could try and control some other factor to attenuate the effects. For example, if they observe the rising price of a product, they could subsidise it to reduce the risk of conflict.

The piece has helped me change my perspective on how climate change could bring about and affect conflict. I used to believe that the repercussions of climate change would mostly be about physical discomfort, however, the fact of the matter is that climate change can become a major driver of conflict. People as well as nation-states will be forced to consider how climate change can affect their functioning, and this will definitely bring about unrest in some

form or the other, like eroding the household income of poorer household, forcing them into revolting against the state that failed to provide basic amenities for them.

In “Warming increases the risk of civil war in Africa” [1], the authors have a take on the impact of global climate change in armed conflict in sub-Saharan Africa. They analyse the possible correlation between temperature and armed conflict and find that warmer years have a significantly higher risk of war, echoing the results of the paper, “Heat and Violence” which we did in class. Their modelled projections predict an increase of about 54 per cent in armed conflict in Africa by 2030, and an additional increase in the amount of battle deaths by about half million.

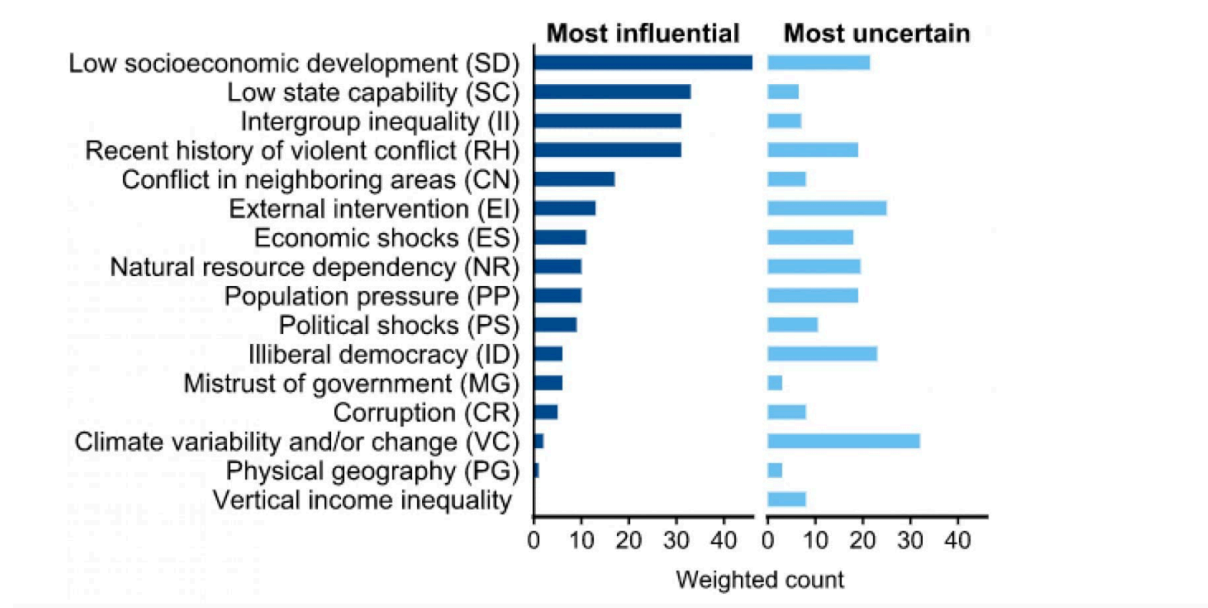
The findings of this paper confirms what the authors were arguing, that climate change causes conflict, but here a more specific aspect of both climate change and conflict is looked upon, namely temperature and armed conflict. They argue that armed conflict could also be a result of economic uncertainties, uncertainties which are caused due to temperature-related yield decline in places heavily dependent on agriculture. By negatively affecting the income of people, temperature causes distress and strain on the economic conditions, increasing the risk of conflict. They also suggest a measure to prevent future civil wars, increasing the robustness of African agricultural practices towards temperature by the government or aid-donors could help secure agriculture-dependent household’s livelihood, reducing risk of conflict.

Another piece which I read, “First Climate Change Conflict” [2], talks about the conflict in Darfur. UN Secretary-General Ban Ki-moon describes this conflict as the “First Climate Change Conflict”. The Sahel region of northern Sudan was experiencing the advancement of Sahara Desert by a mile every year for a few decades, before the break of war in 2003. They also witnessed a decrease in annual median rainfall of 15 to 30 per cent. All of this was putting an increasing strain on the arable land available. Sudan’s predominant agricultural system was smallholder farmers and pastoralists. The farmers were mostly of African ethnicity while the pastoralists were predominantly of Arabic ethnicity. The corrosion of natural resources and desertification resulted in the abrasion of the peaceful coexistence of these two groups.

Here also we can identify how and what lead to the conflict. Climate change put a strain on available common resources, which in turn, increased the competition for these resources

among different groups, which turned the tension into a full-fledged war. This evidence too confirms the links established by the authors.

But apart from Darfur, there is no other major empirical evidence to directly link climate change and conflict (Specifically in Africa, Syria could also be considered, but it is in Asia). An expert panel of eleven people published their analysis on Nature [3], where they rate different factors based on how much they believe it contributes towards conflict.



(Fig 3, “Climate as a risk factor for armed conflict” [3])

These experts ranked socio-economic development as the most influential and climate variability or change as the most uncertain. Their analysis gives climate change a very low score for being influential, but climate variability could directly affect the socioeconomic development in any agrarian society, which is at the top of the list, and hence increase the risk of conflict. So, in essence, climate change could be thought of as a risk increaser, which contributes towards conflict by affecting other variables. Climate change is ranked as the most uncertain variable, so even the experts are not very sure about the different ways climate change could induce conflict in today’s world. But I believe in case factors (like CO2 emission) contributing towards climate change are not brought under control, the risk of conflict due to climate change would be much higher. If the Earth gets warmer by 2 degrees Celsius, the world will become a lot drier, as it takes tremendous amount of heat to warm the Earth, economies and agriculture will be greatly impacted. Many researchers suggest that a 2 degrees rise would be an existential threat to many nations, especially those which are already

unstable because of various political, economic factors. Their ability to mitigate the effects of climate change, or even provide basic human security would be greatly tested. Even the more stable North American and European countries would experience the effects as the countries around them would be getting a lot more unstable, having ripple effects, such as conflict around its borders, refugees seeking asylum, etc. Thus all these evidences does confirm that climate change can cause conflict, sometimes directly like in Darfur, other-times indirectly by affecting different factors/variables like food prices.

Citations:

[1] Warming increases the risk of civil war in Africa, Marshall B. Burke, Edward Miguel, Shanker Satyanath, John A. Dykema, and David B. Lobell

[2] <https://www.wfpusa.org/stories/the-first-climate-change-conflict>

[3] Climate as a risk factor for armed conflict, Katharine J. Mach, Caroline M. Kraan, W. Neil Adger, Halvard Buhaug, Marshall Burke, James D. Fearon, Christopher B. Field, Cullen S. Hendrix, Jean-Francois Maystadt, John O'Loughlin, Philip Roessler, Jürgen Scheffran, Kenneth A. Schultz & Nina von Uexkull