

The multifaceted relationship between extreme weather events, displacement and conflict: New insights from Somalia

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Abstract

Extreme weather and migratory events have been topics of great interest for decades. More recently, a debate has emerged whether the human impact of climate change can lead to armed conflict, and how conflict and extreme climate events interact in inducing large-scale displacement. This paper explores the relationship between conflict and displacement in the context of droughts and floods across Somalia, a country in the East Africa region, in which the population has historically been using migration as coping strategy for the effects of recurring climatic extremes and socio-economic uncertainties. Since 2015, Somalia has been affected by a humanitarian crisis, paired with on-going conflict, which subsequently reduced resilience of its population. Applying panel econometric methods to monthly within-country migration observations from 18 regions together with spatio-temporal conflict and weather data, this paper quantifies the impacts of conflict and extreme weather events on within-country displacement over the period of 2016 to 2018. It combines and analyses conflict-, drought- and flood-related displacement data from the UNHCR-led Protection & Return Monitoring Network (PRMN), disaggregated conflict data from the Armed Conflict Location & Event Data Project (ACLED) with gridded climate estimate data. Empirical evidence suggests significant interaction effects between conflict and extreme weather events on migration, where pre-existing conflict conditions act as accelerators of climate-induced displacement.

The multifaceted relationship between extreme weather events, displacement and conflict: New insights from Somalia

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Idea and Motivation

- Anthropogenic climate change will hit the world's poorest first and hardest.^a Nowhere is that potentially truer than in Somalia, a scattered consortium of the southern Federal Republic and two (semi-) autonomous states, Somaliland and Puntland, in the Horn of Africa.
- Somalia has endured regular cycles of drought disrupting well-established migration paths which have been used as coping mechanisms. Paired with political instability and conflict for the past 20 y and prolonged drought conditions having struck much of the Horn in 2015, 2016 and 2017, the country finds itself in a humanitarian crisis.
- A global debate has emerged whether the human impact of climate change can lead to armed conflict, and how conflict and extreme climate events interact and potentially induce large-scale displacement.

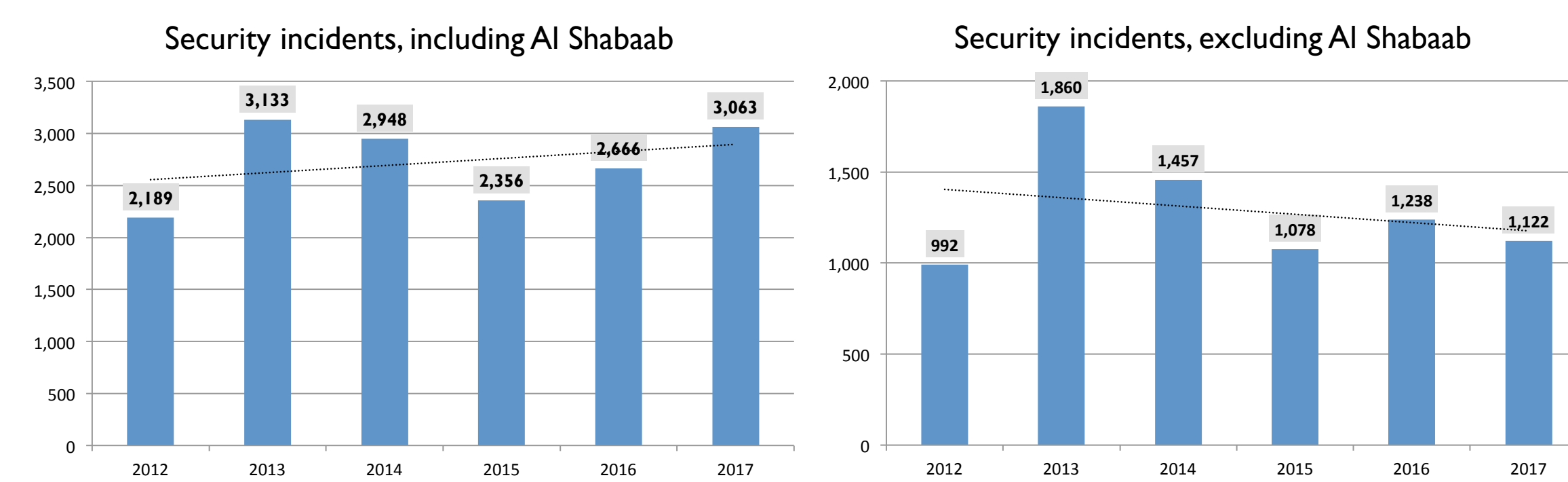


Figure 1: Trends in conflict events 2012-2017, based on disaggregated daily observational data from the Armed Conflict Location & Event Data Project (ACLED). Incidences vary in intensity depending on the conflict party, e.g. Al Shabaab.

Can we blame climate change for Somalia's humanitarian crisis?

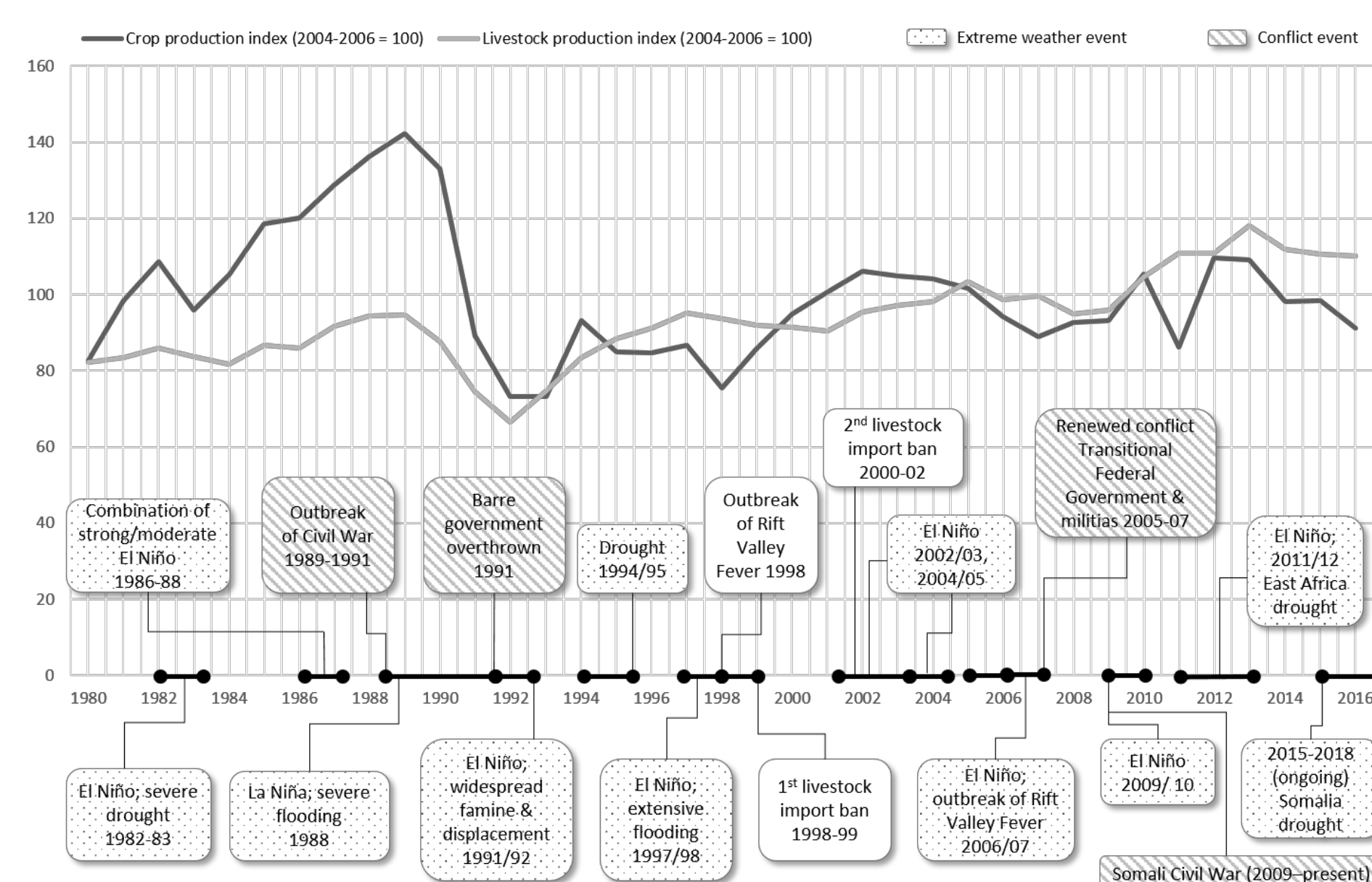


Figure 2: Timeline of major climate conflict shocks in the context of agricultural output. ^b

In Somalia, migration stories have a climate-conflict chapter



Figure 2: Network of weighted movements including displacement origin and destination across Somalia's 18 regions from 2016 to 2018. Source: Protection and Return Monitoring Network (PRMN).

- Here, we show the interconnectedness of regional displacement in relation to drought and conflict incidences over 2 y (fig. 2).
- Urban areas represent popular destination areas of internally displaced, e.g. the Banadir region where Somalia's capital Mogadishu is located.
- Conflict appears less of a driver of large-scale displacement, rather representing a constant feature in displacement dynamics across Somalia (fig. 3).

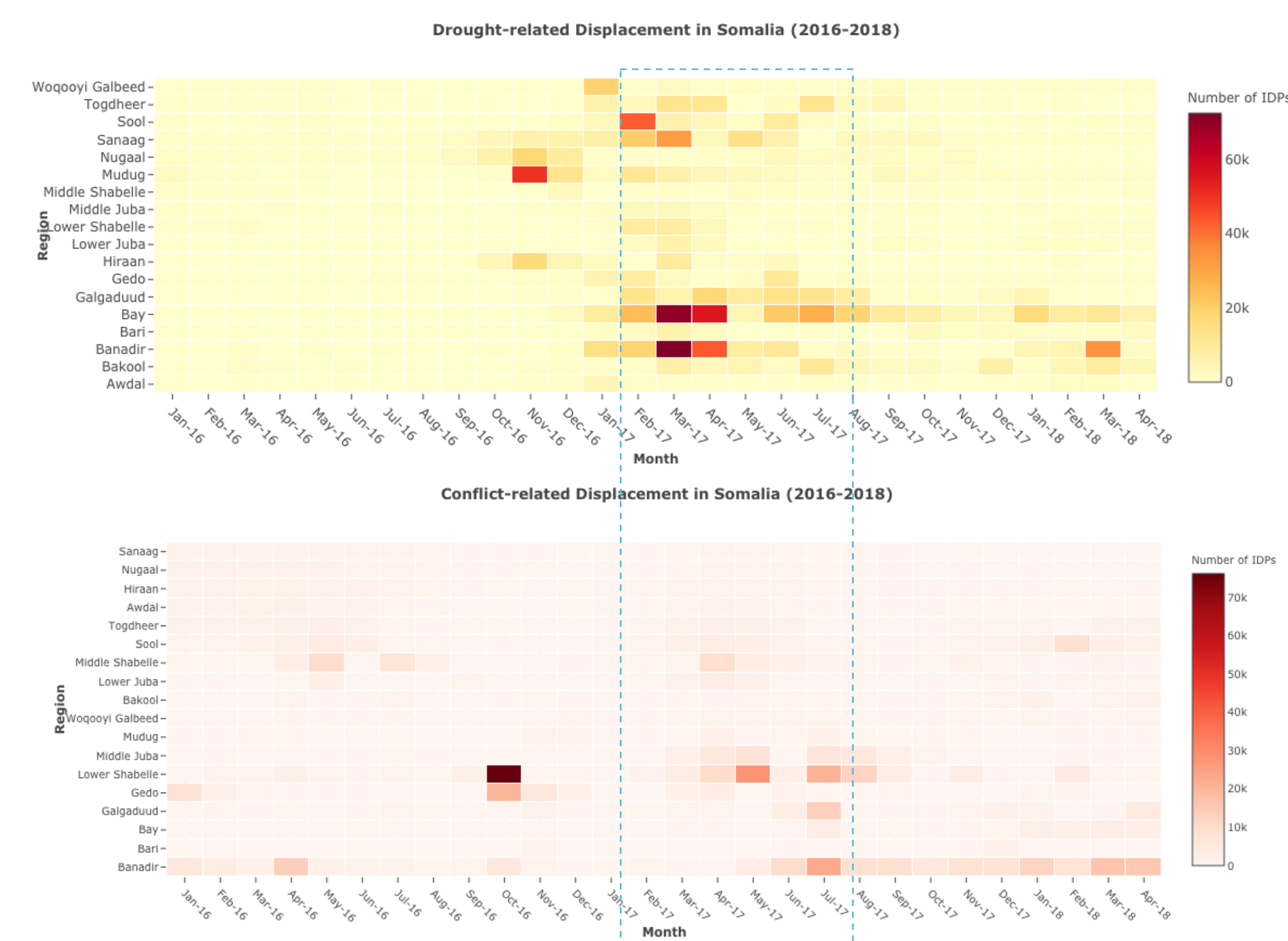


Figure 3: Regional distribution of monthly drought-related (top) and conflict-related displacement at destination (2016-2018).

Source: Protection and Return Monitoring Network (PRMN)

Validation through climate data and literature

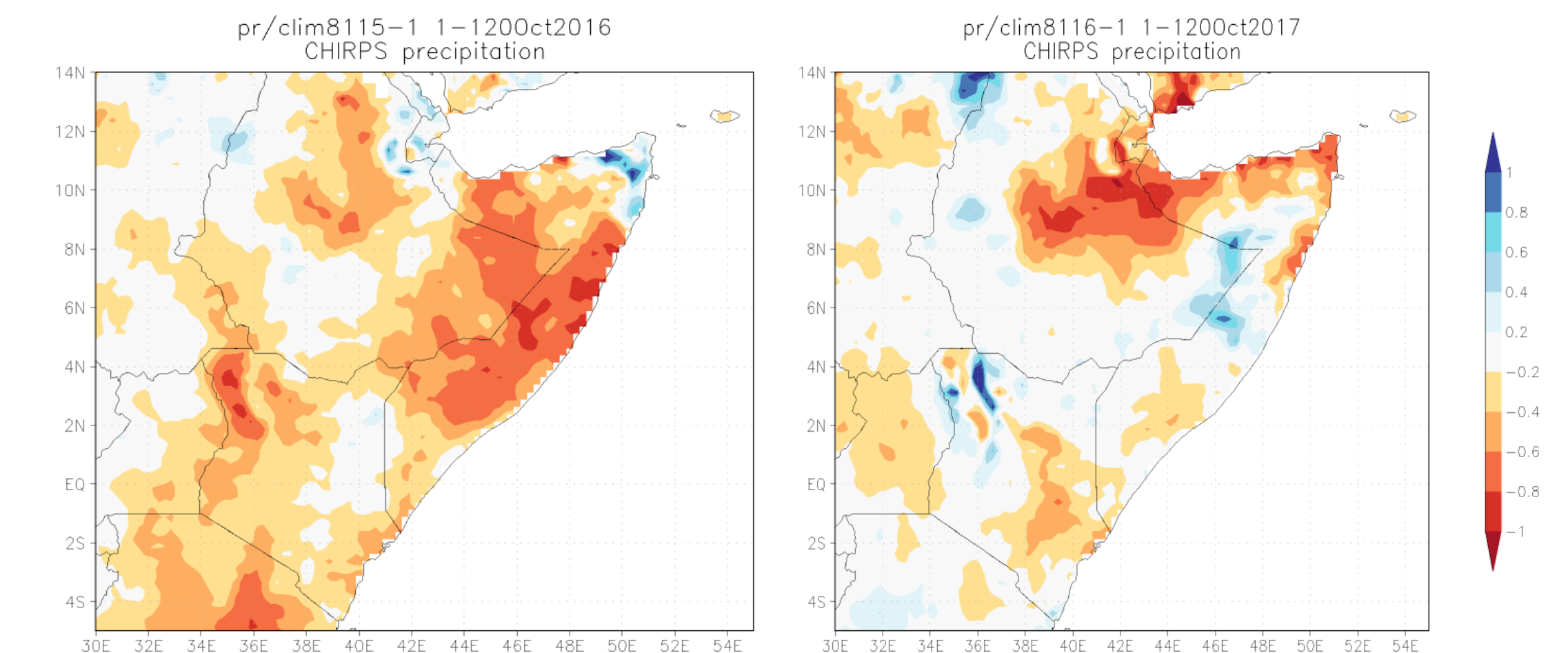


Figure 4: Map of precipitation anomalies during the onset of the (on-going) drought October 2016 averaged over four months (left) compared to the same timeframe October 2017 (right). Daily observed rainfall baseline is 1981-2011. Dark red (-1) indicates no rainfall, bright red 0-20% of normal, dark orange 20-40%, grey about normal rainfall. Source: CHIRPS.

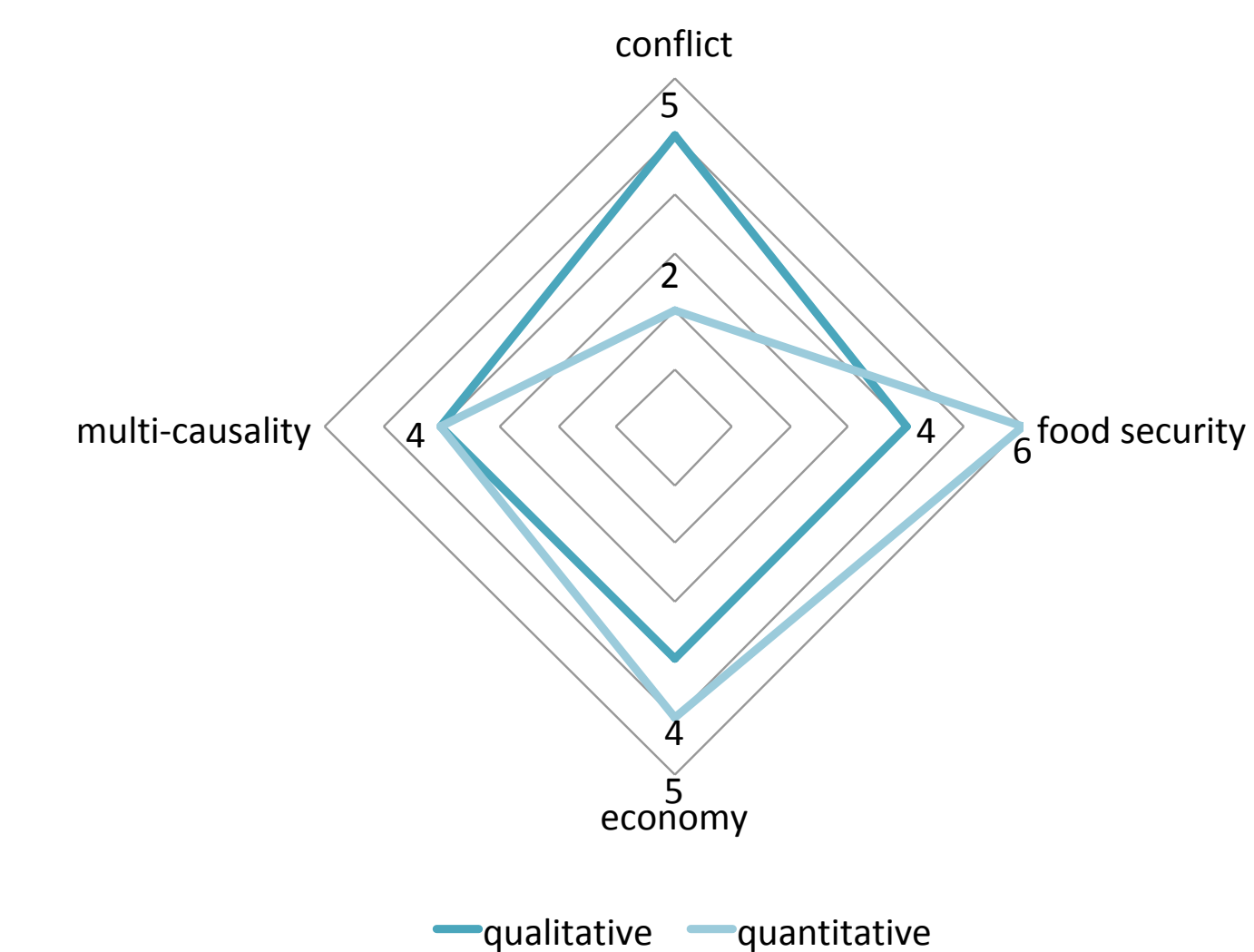


Figure 5: Human mobility in the context of non-climate factors - food security and conflict playing a significant role in existing literature.^c

- A review of 12 case studies on human mobility in East Africa shows that literature accounts for issues of conflict, food security and economic motives.
- In Somalia, displacement is multi-causal and cannot be seen without historical and economic inter-connections.

Take-home messages

- We demonstrate that internal displacement is multi-causal.
- We show lagged dynamics of drought-related displacement turning into conflict-related displacement.
- We find that armed conflict in Somalia is dynamic and complex, shaped by vested interests of actors, independent from climate factors.
- Caveats in available data: Mobility data shows only IDPs during a 2 y time horizon which is too short to make any general statements on whether or not climate change leads to displacement.

^a Hallegatte and Rozenberg. (2017). *Nat. Climate Change*. [DOI.org/10.1038/nclimate3253](https://doi.org/10.1038/nclimate3253)

King and Harrington (2018). *GRL*. [DOI.org/10.1029/2018GL078430](https://doi.org/10.1029/2018GL078430)

^b Thalheimer and Webersik (in revision). *Climate change, conflicts and migration*.

^c Thalheimer and Otto (forthcoming). *Reviewing extreme Weather Events and Human Mobility across East Africa*.

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