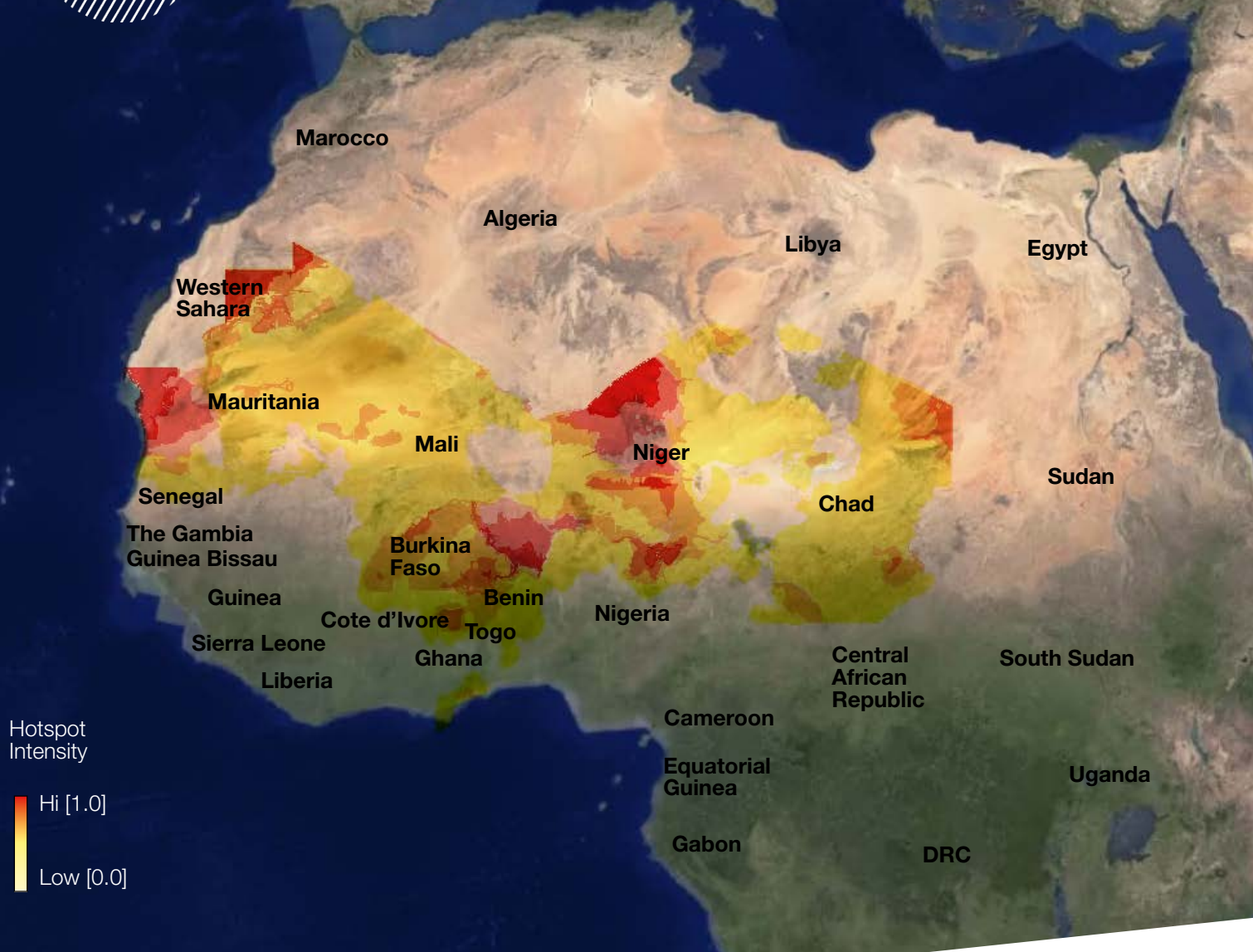




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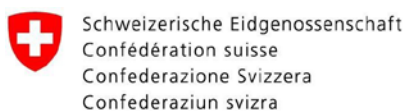
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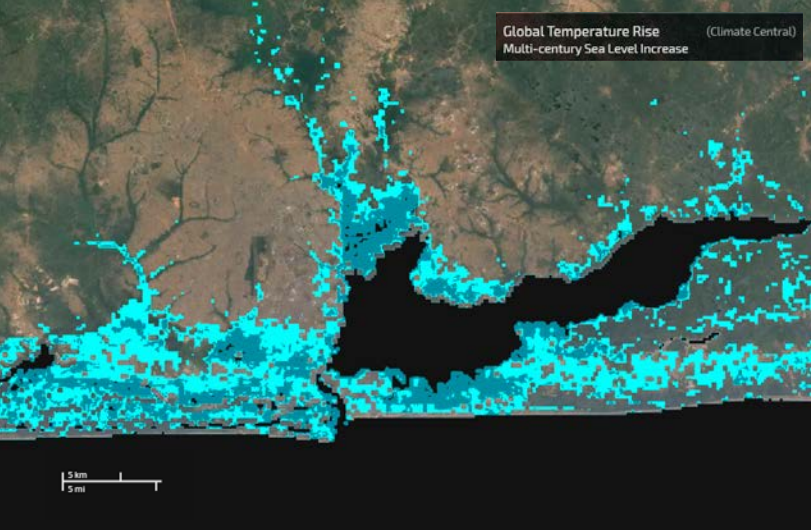
WEST AFRICA AT THE PRECIPICE: VISUALIZING CLIMATE STRESS AND INSECURITY

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The 2010-2019 period was the hottest decade ever recorded. The effects of global warming on food security, water availability, competition over resources, migration and displacement and economic development are far-reaching and global. Fragile countries, cities, communities and households will be hardest hit - especially in West Africa. Over 25 of the 50 countries most vulnerable to climate change are also beset by fragility and 12 of the 20 countries most exposed to climate change are affected by armed conflict. The following graphics, which summarize data visualizations available at the hyperlinks below, illustrate how climate change is acting as a threat multiplier for armed conflict in the West African region.

With support from





● Sea Level Rise
2° C

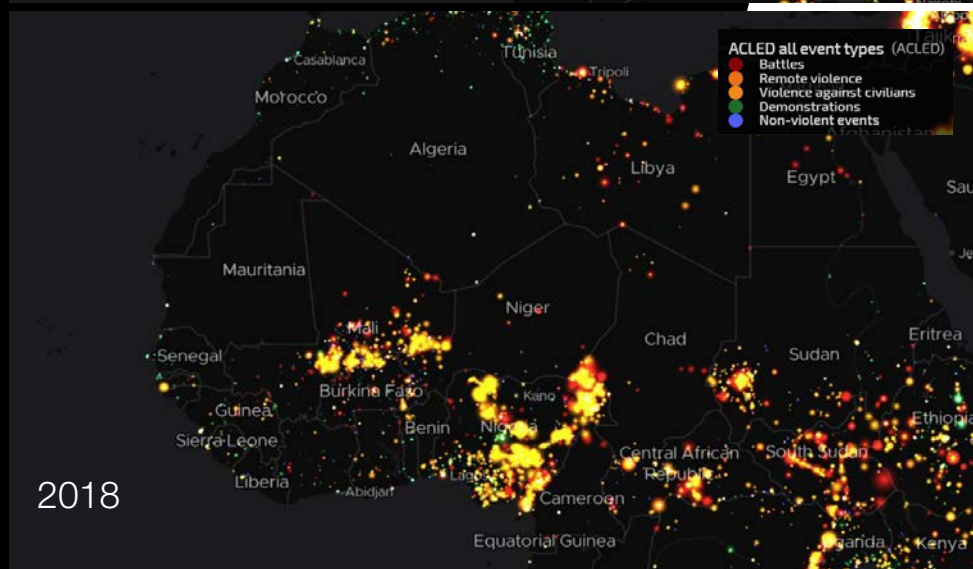
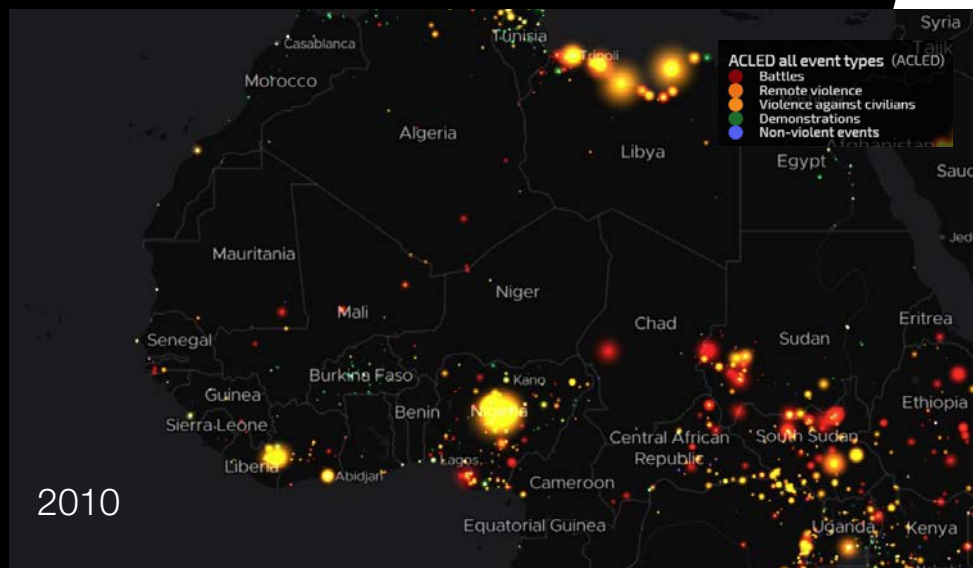
● Sea Level Rise
4° C

Rising Seas

West Africa's coastal populations are at great risk. Demographers predict that 70 to 95 million people could inhabit West Africa's coastal cities by 2050. Scientists estimate that around 5,500 km of the region's coastlines could be severely degraded by rising sea levels. The social and economic costs will be significant. Coastal flooding and associated disease spread are already resulting in an estimated 13,000 deaths a year in Benin, Cote D'Ivoire, Senegal and Togo. The costs of environmental degradation in these same countries totaled \$3.8 billion (5.3% combined GDP) in 2017.

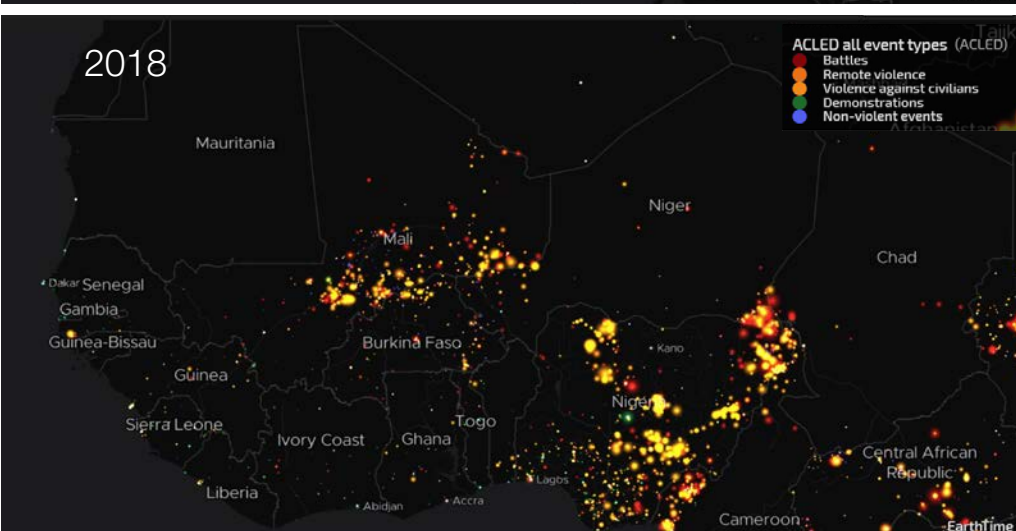
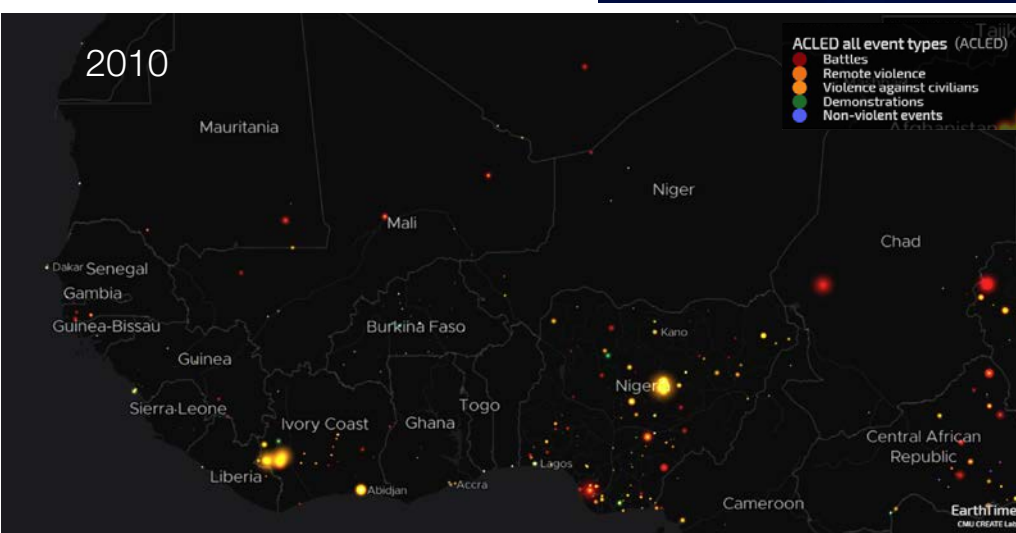
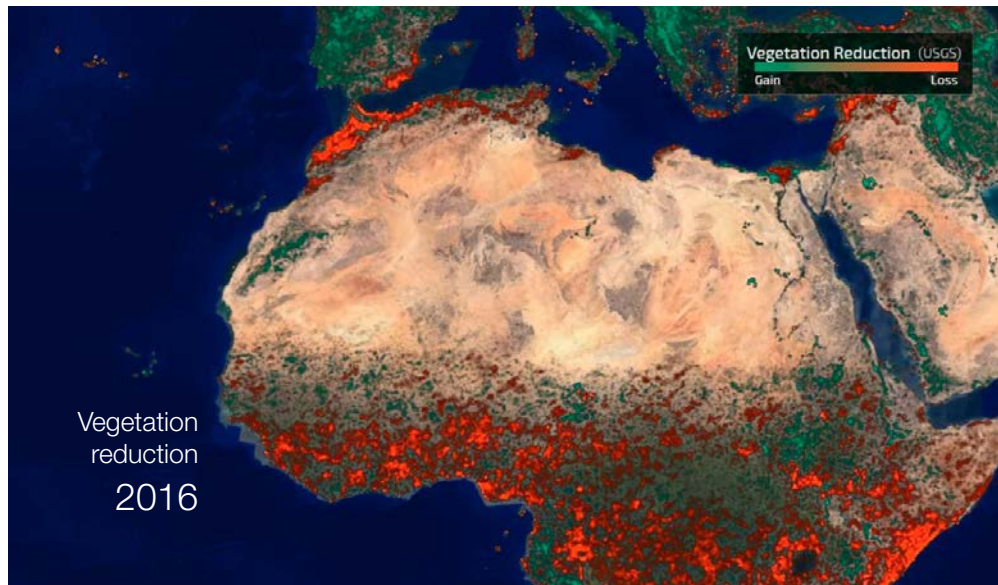
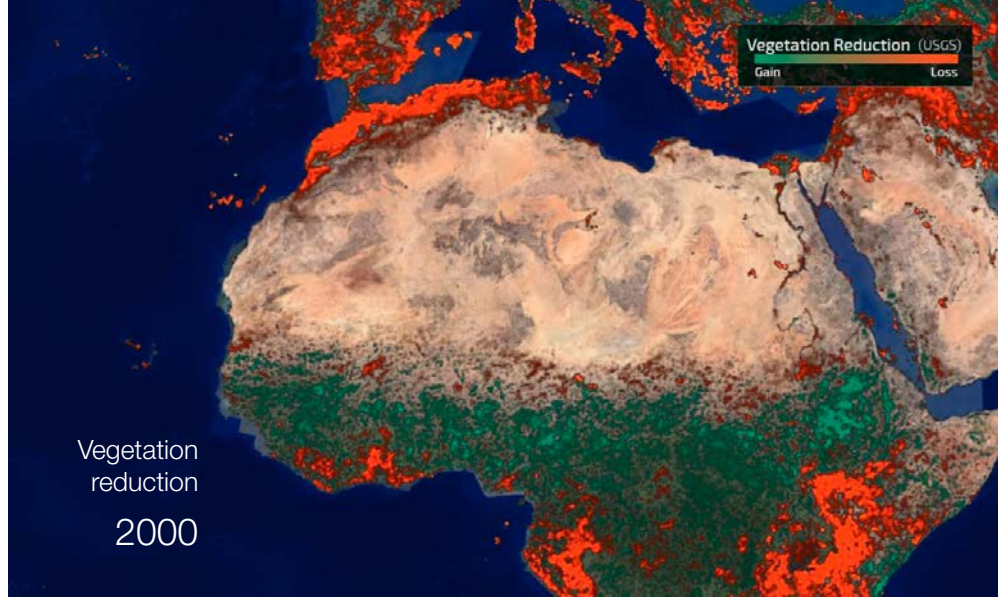
Coastal violence

Climate-driven changes pose a serious threat to food security, including to populations dependent on the coastal economy. By 2050, experts believe that the Maximum Catch Potential for fishing industries could decline by 30% or more in the Gulf of Guinea, a region where 4.8 million people rely on fishing to sustain their livelihoods. This will impose pressures on fragile ecosystems and contribute to growing competition. Senegalese fishermen are increasingly crossing the border to Mauritania to fish, which has led to violent exchanges with Mauritanian coastguard. As sea-level rise accelerates, such altercations will intensify and provoke further conflict. The massive displacement of populations will also generate added pressure on inland cities and villages with limited capacities to service new arrivals.



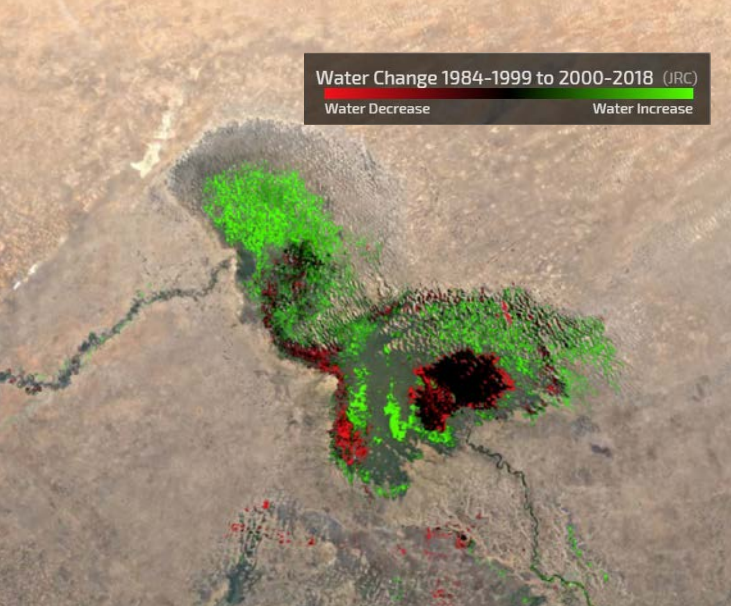
Migration Patterns

Climate change is accelerating voluntary cross-border and internal migration and forced displacement across the Sahel. The region is already warming 1.5 times faster than the global average. Today, roughly 20 million Sahelian pastoralists travel southward with their livestock during the dry season, then back northward during the wet season. These changes are acutely felt at the border of Burkina-Faso and Mali. The intensification of drought risks and shortening of rainy seasons, combined with increased interannual variability of rainfall, is disrupting livelihoods that are already stressed by rapidly diminishing water access.



Cross-border tensions

Push factors such as reduced water access and pastureland are generating dangerous flashpoints for violence. There are countless cases of military, militia and police clashing with pastoralists who are forced to graze in contested terrain. Disputes are turning violent because of competition for water and pastoralists over-using farmers' fields or crops. Violent competition between pastoralists and farmers is increasingly common on the border of Mali and Burkina Faso and across the Middle Belt of Nigeria. These tensions flare up when customary dispute resolution systems fail. Political and economic elites are also involved in exacerbating (violent) conflict.



Increase in Variability

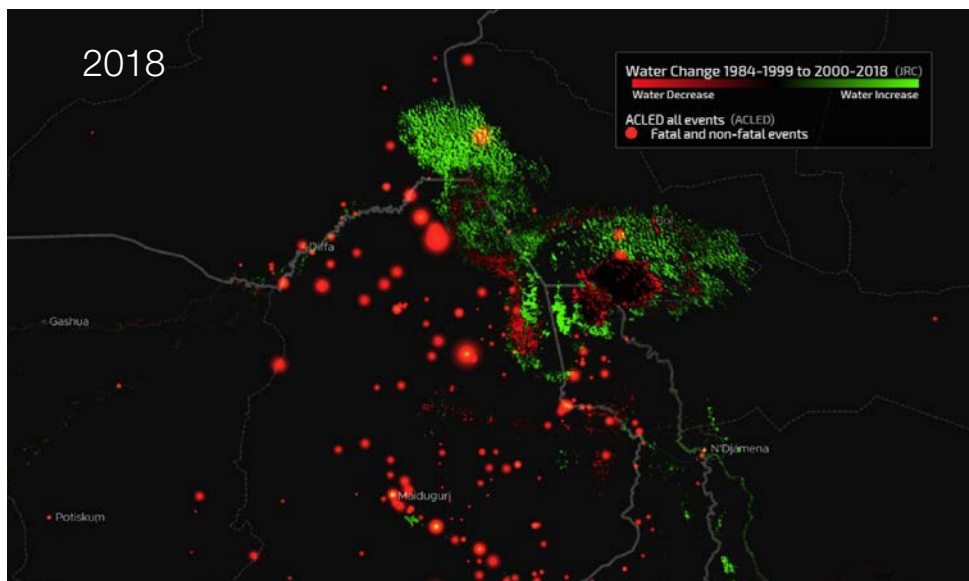
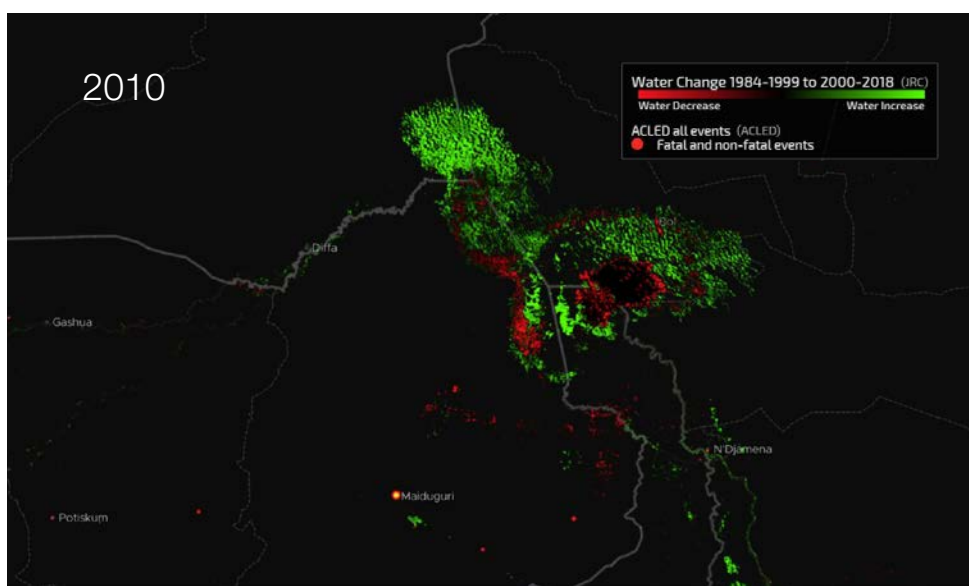
Lake Chad is only a few meters deep and is particularly sensitive to a changing climate. More than 30 million people from Chad, Cameroon, Niger and Nigeria depend on it as a water source. The lake's surface area receded during severe droughts in the 1970s and 1980s. It has expanded in following decades owing to rising precipitation which swelled input rivers. Climate change is exacerbating interannual variability – changing the duration of the rainy season, contributing to more extreme rainfall and drier dry periods. The possible dividends of increased rainfall may therefore be offset by the risk of catastrophic floods. And as reliable access to water decreases, so too will access to arable land. The Sahel is moving south at a rate of around 1,400 square miles a year. This will lead to even greater displacement and competition around water resources.

Violence in the Lake Chad Basin

Significant changes to weather patterns will disrupt an already precarious agriculture-based economy in the Lake Chad Basin. Rising food insecurity, combined with overall reductions in well-being, can fuel grievances and, if mobilized by elites or extremist actors, can increase the likelihood of outright violence. Recurrent clashes between Shuwa Arabs from the Chad and Fulani pastoralists from Nigeria have broken out near the Lake's southern pool. A number of national military, armed opposition, extremist and vigilante groups, including Boko Haram, operate in the region. Violent deaths have climbed from fewer than 100 in the late 1990s to over 10,000 in 2020. Hundreds of thousands of internally displaced populations and refugees are vulnerable to the violent backlash.

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Climate change acts as a threat multiplier, exacerbating the risk of international and civil conflict. In vulnerable countries that already face stresses such as income, ethnic and gender inequalities and a high dependency on agriculture, the risks of climate change triggering the onset, escalation and resurgence of conflict are especially high. Climate adaptation and conflict resolution strategies must take into account the complex relationship between climate change and conflict in order to ensure that West Africa's future is both sustainable and secure.



Earth Time story visualizations

- + [The Coastal Threat](#)
- + [Transhumance Dynamics](#)
- + [Rainfall and Violence Around Lake Chad](#)