African conflicts spurred by warming

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Africa is poised to experience a surge in civil wars, causing nearly 400,000 additional battle deaths by 2030 – all as a direct result of rising temperatures. This bold prediction is one of the most alarming results yet to emerge from attempts to discover how climate change will affect patterns of human conflict. It is already proving controversial.

Previous attempts to model the effects of climate on patterns of conflict in Africa have mostly concentrated on rainfall. But now researchers led by Marshall Burke at the University of California, Berkeley, and David Lobell of Stanford University have studied both rainfall and temperature. They found that warming was much more strongly associated with civil strife than precipitation.

Burke and Lobell analysed data on the incidence of African civil wars alongside local temperature and rainfall measurements from 1981 to 2002. They found a strong relationship between spikes in temperature and the likelihood of civil war. Because climate models give fairly consistent predictions for warming across Africa, the researchers were able to forecast a 54 per cent rise in the incidence of civil conflict by 2030, resulting in an extra 393,000 combat deaths. The prediction assumes that global carbon dioxide emissions are not curbed in the short term and that future wars are as deadly as recent ones.

Other researchers agree that temperature changes may affect conflict, but some are sceptical that the effect will be as large as Burke and Lobell claim. "I'm just not convinced," says Peter Brecke of the Georgia Institute of Technology in Atlanta, who has previously found a global link between increased conflict and the Little Ice Age, which lasted from around 1400 to the late 1800s.

One issue is that the two-decade period studied by Burke and Lobell may have been unusually conflict-prone, amplifying the apparent effect of temperature. Cullen Hendrix, a political scientist at the University of North Texas in Denton, points out that some countries were destabilised when the superpowers withdrew aid to African dictators as the Cold War ended. "This is probably going to wind up being the first salvo in a pretty significant debate," he says.

"We're very willing to be proven wrong," says Lobell. But the link with temperature remained even after the researchers controlled for measures of wealth and democracy. "The result seems remarkably robust," adds Burke.
If the link bears further scrutiny, policy-makers will need to know how warming triggers conflict. Burke and Lobell say the most likely explanation is that warmer temperatures reduce crop yields or other aspects of economic productivity, increasing social tension. But some studies have suggested that it's inherent in people to become more violent when the mercury rises.

Rich nations can provide economic aid or share plant-breeding technologies that allow crops to withstand extremes of climate, says Hendrix, "but we can't change human nature".