

Drought

Are droughts getting worse on a global scale?

The IPCC says it is hard to say ('low confidence') whether global drought has become better or worse since 1950.¹

Figures from the US National Oceanic and Atmospheric Administration (NOAA) show no trend in the proportion of the globe in drought since 1950 (see Figure 1).² Others have suggested a decline in drought levels in recent decades.³

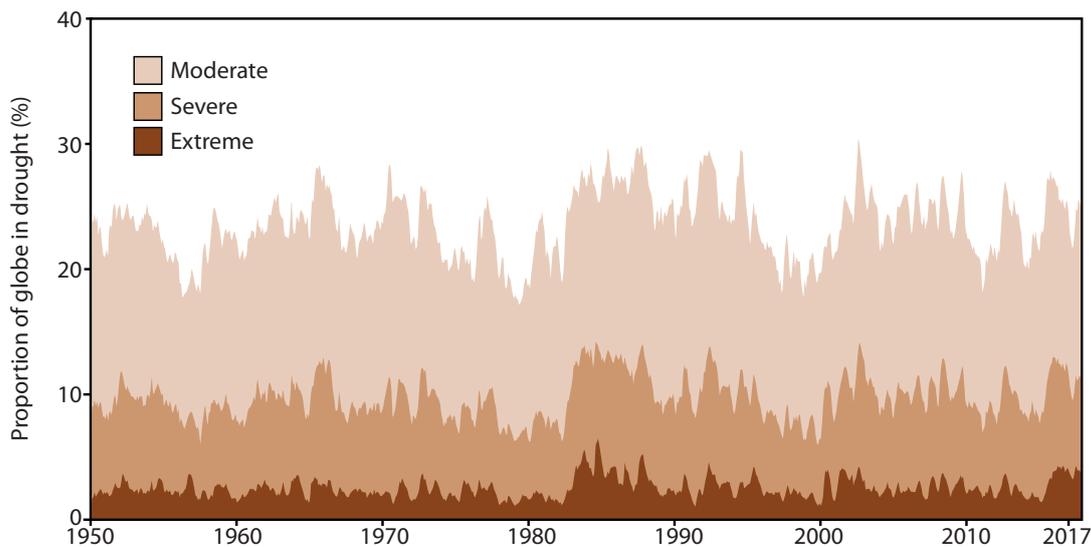


Figure 1: The proportion of the globe in drought is largely unchanged.

What about regionally?

The lack of a global trend disguises changes that have been happening regionally. Some regions have become dryer, and others wetter. The IPCC has noted drought increases in the Mediterranean and West Africa but drought decreases in central North America and northwest Australia.³

What is causing these changes?

Long term changes to precipitation levels have tended to make drought conditions more or less likely in certain regions. Human-influenced environmental impacts caused by land use change, soil erosion and increased water consumption also have an impact. Any individual drought is primarily the product of the prevailing atmospheric conditions, which are strongly influenced by recurring cycles such as La Niña, El Niño and the Indian Ocean Dipole.

Due to the complex interaction of many factors, any variation in drought levels over time is difficult to attribute, and the IPCC has low confidence in its ability to explain global trends.¹

How many people are being killed by drought conditions?

Evidence compiled by Our World in Data shows that the number of global deaths from drought has reduced significantly (see Figure 2). 1928 saw 3 million people die after drought hit north-western and northern China. Some estimates have put the death toll even higher.

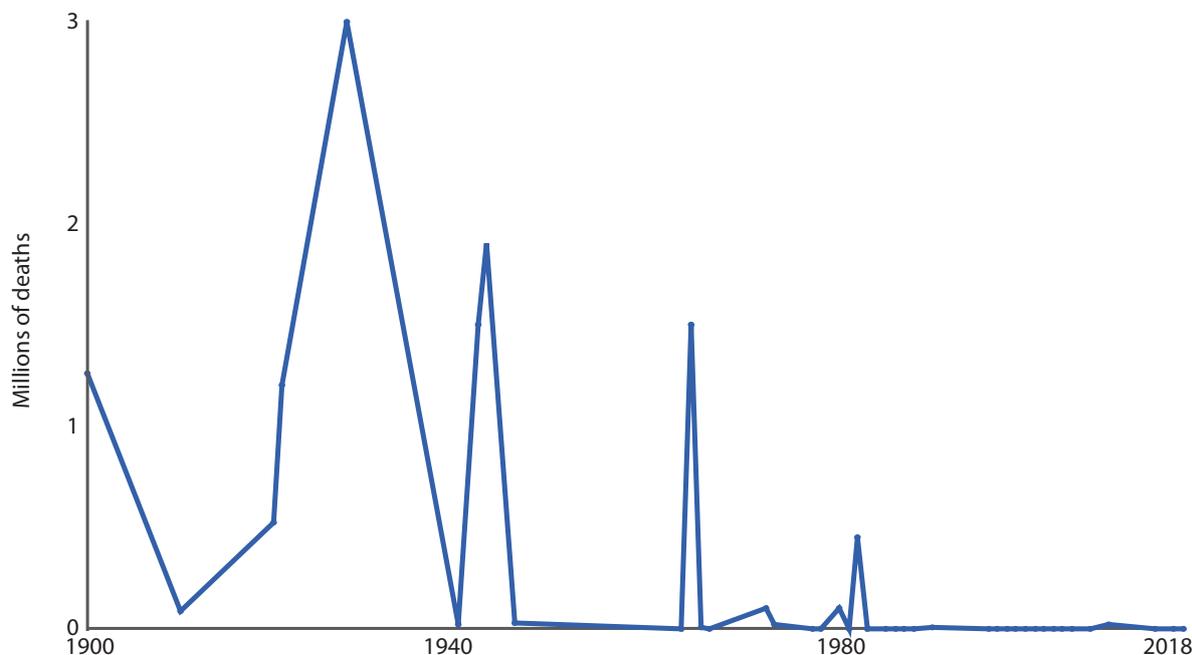


Figure 2: Fewer people are dying from drought

But how many people are still affected?

The total number of people being affected by drought continues to be high, and estimates vary. Albeit, this is in the context of a rising global population and with the severity of drought impacts much reduced. Africa continues to be disproportionately affected, for both climatological and political reasons. Conflict in the region as well as higher food prices due to the increased use of food crops as biofuels, significantly worsened the impact of droughts in East Africa in 2010/11.

Is drought affecting agriculture?

Global crop production has expanded threefold over the past 50 years,⁴ through technological developments that have led to higher crop yields and more intensive forms of agriculture. This has meant a world that is now much better fed despite having a considerably higher population.

What might happen in the future?

The IPCC project global-scale decreases in soil moisture and an increased risk of agricultural drought by the end of the 21st century under the RCP8.5 scenario. The problem is that the RCP8.5 scenario is now looking very unlikely as it assumes that global fossil fuel consumption will continue rising until 2100. Most economic forecasters do not see this as likely.

Improvements in agricultural yields, disaster response and the integration of global food markets mean that people are far more resilient to drought than they were in the past. They also provide us with optimism that continued improvements in these areas will make us even more resilient in the future – even if droughts do become more frequent.

Notes

- 1 Fifth Assessment Report, WG1 Summary for Policymakers
- 2 <https://www.climate.gov/news-features/featured-images/2017-state-climate-global-drought>
- 3 Hao, Z., et al. *Nature Sci Data* 1, 140001 (2014)
- 4 <http://www.fao.org/news/story/en/item/178138/icode/>

We regularly update our factsheets. Feel free to contact us with any new data or information.