



Extreme drought in Ethiopia stretches drought management systems

Human impact summary

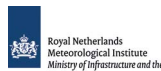
Key messages

- On 4 June 2015, Ethiopia's National Meteorological Agency declared that the spring *belg* rains had failed. Soon after, the summer *kiremt* rains were severely delayed and erratic, affecting 9.7 million Ethiopians.
- An international group of scientists found that the 2015 drought was an extremely rare event that only happens about once every few hundred years in north-eastern and central Ethiopia.
- The 2015 El Niño event, a predictable phenomenon, was a factor in increasing the severity of this drought event.
- Established national and international preparedness and response systems in place to manage the impacts of extreme events are limited in their ability to mitigate all impacts from a very extreme event such as the 2015–16 drought.

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This factsheet is produced by the Raising Risk Awareness project, a partnership between the World Weather Attribution initiative and the Climate and Development Knowledge Network, which seeks to deepen understanding of the role of climate change in extreme weather events and how decision-makers can use this information to increase societies' resilience to climate change. This factsheet aims to provide the practical information on vulnerability and exposure of local populations to specific extreme weather events and is a companion to the scientific analysis on the role of climate change in extreme heat in northwest India in May 2016. Find the deeper scientific analysis of this extreme event on our project website www.cdkn.org/climaterisk



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Ethiopia is one of sub-Saharan Africa's fastest growing economies

Background

Ethiopia is one of the most populous countries in Sub-Saharan Africa and one of the fastest-growing economies. Ethiopia's economy grew at an annual rate of 10.8% between 2003 and 2015.¹ In parallel, over a similar period, the number of Ethiopians living in extreme poverty dropped by 22 percentage points, from 55.3% in 2000 to 33.5% in 2011. The Ethiopian government is currently implementing the second phase of its Growth and Transformation Plan in an effort to further advance these strong trends.²

In collaboration with longstanding development partners, the Ethiopian government has implemented the Productive Safety Net Programme (PSNP) since 2005, to improve food security. The PSNP uses food and cash transfers to help households overcome food deficits; in 2012, it served some 7.64 million food-insecure people.³

Ethiopia's bio-physical landscape is characterised by undulating topography with highlands and lowlands, which in part influence settlement patterns and livelihood options. Most pastoralists, for example, live in the hilly countryside, while the more stationary agro-producers occupy the lowlands.

Ethiopia has two major rainy seasons. The *belg* season runs from February to May and provides rainfall for agriculture in the centre of Ethiopia, as well as pasture for livestock.^{4,5} About 10% of the Ethiopian population is entirely dependent on this rainy season. The *kiremt* rains are more reliable and run from June to mid-September, providing water mainly for agriculture in the western half of the country.⁶ Droughts are typically defined by a lack in total rainfall amounts during one or more of the rainy seasons – although impacts can occur with changes in the timing or frequency of the rains over a season as well. Due to the relative importance of the rainy season to agriculture production, Ethiopia also faces recurring food insecurity. The government receives around \$USD200 m (£166.2 m) in food assistance each year.⁷

- 1 World Bank (2017) 'Ethiopia economic overview'. Washington: World Bank (www.worldbank.org/en/country/ethiopia/overview).
- 2 World Bank (2016) 'World Bank provides funds to help Ethiopia mitigate the impact of drought'. Washington: World Bank (www.worldbank.org/en/news/press-release/2016/06/30/world-bank-provides-funds-to-help-ethiopia-mitigate-the-impact-of-drought).
- 3 World Food Programme (2012). 'Ethiopia Productive Safety Net Programme (PSNP)'. Rome: WFP (www.wfp.org/sites/default/files/PSNP%20Factsheet.pdf).
- 4 Degefu, W. (1988) 'Chapter 2: Some aspects of meteorological drought in Ethiopia'. In Glantz, M. H. (ed.) *Drought and hunger in Africa*. Cambridge: Cambridge University Press.
- 5 Gissila, T., Black, E., Grimes, D. I. F., & Slingo, J. M. (2004) Seasonal forecasting of the Ethiopia summer rains', *International Journal of Climatology* 24(11): 1345–1358. doi:10.1002/joc.1078 (<http://onlinelibrary.wiley.com/doi/10.1002/joc.1078/abstract>).
- 6 Met Office (2016) *Seasonal weather assessment for Ethiopia during March–July 2016*. Exeter: Met Office. (http://reliefweb.int/sites/reliefweb.int/files/resources/seasonal_outlook_for_ethiopia_-_feb_update.pdf).
- 7 USAID (2017). 'Food assistance fact sheet – Ethiopia'. Washington: USAID (www.usaid.gov/ethiopia/food-assistance).

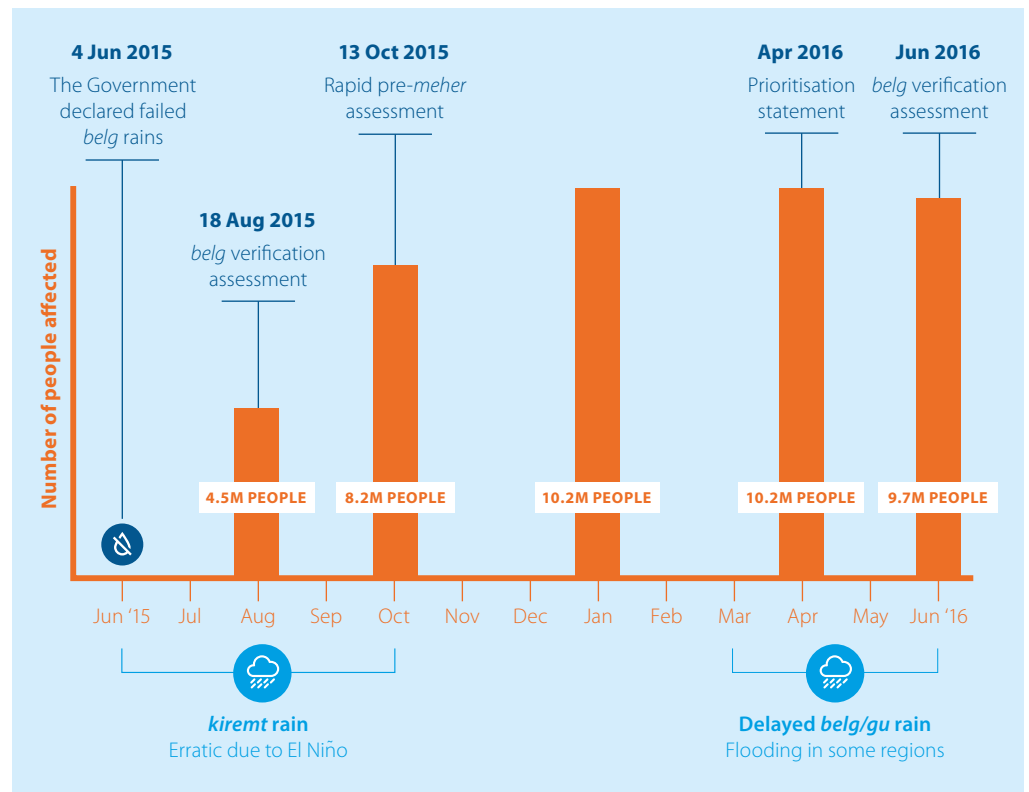
Impacts of the 2015–16 drought

On 4 June 2015, Ethiopia's National Meteorological Agency (NMA) declared that the belg rains had failed. Soon after, the kiremt rains were severely delayed and erratic, affecting 9.7 million Ethiopians in a national emergency. In December 2016, the Government of Ethiopia and the UN released a joint Humanitarian Response Document, calling for emergency assistance for 10.2 million people, in addition to the 7.9 million people already under routine support from the PSNP.¹

Beyond total precipitation deficits, both the timing and the spatial distribution of rainfall had an impact on livelihood activities, such as agriculture and pastoralism.² Many parts of central and northern Ethiopia were reported to be in 'acute crisis' in 2016.³ Over 75% of crop production was reported lost in most of the areas affected, a million livestock were reported to have died, and 1.7 million people plus a further 435,000 were estimated to have experienced, respectively, moderate-to-acute malnutrition or severe-acute malnutrition.⁴ The government of Ethiopia and the international humanitarian community mobilised to meet emergency needs, including for water, sanitation and hygiene, and food and nutrition. The government launched an appeal for \$1.62 bn, which was met only partially by the end of 2016.⁵ It also allocated more than \$700 m of its own resources, primarily to address the needs that would not be answered by the international appeal.

- 8 USAID (2016) *El Niño in Ethiopia, 2015–2016: A real-time review of impacts and responses*. Washington: USAID (www.agri-learning-ethiopia.org/wp-content/uploads/2016/06/AKLDP-El-Nino-Review-March-2016.pdf).
- 9 Singh, R., Worku, M., Bogale, S., Cullis, A., Adem, A., Irwin, B., Lim, S., Bosi, L., & Cabot Venton, C (2016). *Reality of resilience: perspectives of the 2015–16 drought in Ethiopia*. London: Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED) (www.braced.org/contentAsset/raw-data/18256c98-2a10-4586-9317-17a68b45c1a7/attachmentFile).
- 10 Famine Early Warning Systems Network (FEWS NET) (no date) *Ethiopia food security outlook October 2016 to May 2017: Crisis (IPC Phase 3) expected in parts of Oromia, SNNPR, and southern pastoral areas*. FEWS NET (www.fews.net/east-africa/ethiopia/food-security-outlook/october-2016).
- 11 Government of Ethiopia and partners (2016). *2016 Ethiopia humanitarian requirements document: midyear review*. Addis Ababa: Government of Ethiopia (http://reliefweb.int/sites/reliefweb.int/files/resources/ethiopia_hrd_-_mid_year_review_12_august_2016.pdf).
- 12 Government of Ethiopia and partners (2016) Ibid.

Crisis timeline



Source: Government of Ethiopia¹³

Vulnerability and exposure to drought

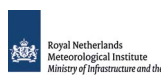
Advances are being made in improving Ethiopia's resilience to climate shocks and stresses

The 2015 event is defined by the total amount of rainfall that occurred from February to September in a box around central and north-eastern Ethiopia. Scientists estimated this drought to have been at least a one in 60-year event, but more likely a one in several hundred-year event, in the central to north-eastern part of the country, making it exceptionally rare there. During the 2015–2016 drought, the PSNP continued to provide cash transfers to clients, extending these into the Somali region.¹⁴ While food transfers were delayed, cash transfers were increased to fill the gap. In addition, the PSNP suspended infrastructure requirements in some areas due to the drought conditions.

Given that the rarity of the drought was most likely a one in several hundred-year event, it would have placed significant strains on most public services – but in spite of the impacts, a comparison with the worse cases of 1984 and 1973 testifies to the advances being made in improving the resilience of Ethiopians to climate shocks and stresses.

13 Adapted with permission from: Government of Ethiopia and partners (2016). *2016 Ethiopia humanitarian requirements document*. Addis Ababa: Government of Ethiopia (http://reliefweb.int/sites/reliefweb.int/files/resources/ethiopia_hrd_2016.pdf).

14 Tozier de la Poterie, A., et al. (2017). 'Preparing for the 2015–16 El Niño: Humanitarian Action in Zambia, Somalia, Kenya, Ethiopia and Malawi'.



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What next?

The government of Ethiopia and international donor agencies have increased efforts to build resilience to climate extremes following this drought. This has included creating new government agencies to focus on disaster risk reduction, and ensuring that relevant actors work closely with the National Meteorological Agency to receive timely forecasts of potential flooding or drought that can lead to early action.

Recommended further reading

[Ethiopia drought science summary](#) (CDKN)

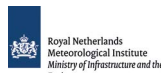
[Reality of resilience: perspectives of the 2015–16 drought in Ethiopia](#) (CDKN)

[2016 humanitarian requirements document](#) (Government of Ethiopia and partners)

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