

# Climate change brings rain to fragile African ecosystems

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Live Aid took place 30 years ago this summer, raising £150million for drought-stricken regions of Africa. But the world inadvertently did something else to help: greenhouse gas increases brought back life-giving rains.

A new study by scientists at the National Centre for Atmospheric Science, University of Reading, UK, shows how increased greenhouse gases in the atmosphere accidentally triggered a return of the crucial seasonal rains on which much of the Sahel region relies for agriculture and drinking water.

The Reading scientists say the findings show just how fragile and sensitive the African climate is to man-made [climate change](#).

In the 1970s and 1980s, a large part of North Africa was suffering from a devastating persistent drought, leading to a famine in which more than 100,000 people died. Since then, rainfall levels have recovered significantly.

Scientists used a supercomputer climate simulator to study different influences on North African rainfall. When they examined the increases in rainfall since the 1980s, they found around three-quarters of the additional rain was caused by rising [greenhouse gas](#) concentrations.

Previous studies had suggested other factors, especially changes in the temperature of the Atlantic and Indian Oceans, would be more influential on the region in the short-term.

## **'Already having impact'**

Professor Rowan Sutton, who led the research, said: "Scientists often study how greenhouse gas levels in the future will influence the climate. These findings show how even the greenhouse gases already emitted by humans, while only a fraction of those projected for the future, have nevertheless affected rainfall on a continental scale.

"This shows how climate change can hit specific countries and regions in a much more complicated way than the simple idea of 'global warming' might suggest. In particular, we are beginning to discover how climate change is influencing rainfall patterns. What we are learning shows that human activity is already having a major impact."

The scientists added that while these results suggest that climate change has had some beneficial effects for this part of Africa in the short term,

the long-term impacts will be very different as greenhouse gases continue to accumulate in the atmosphere.

The latest UN assessment of [climate change impacts](#), produced by the Intergovernmental Panel on Climate Change, shows Africa will face increased risks from climate change. These include heatwaves, sea level rise, flooding and drought, leading to potential crop failures, water shortages, and disease.

## 'Upsetting natural system'

Professor Sutton added: "These positive short-term impacts were accidental. No-one was trying to bring them about. Nevertheless, such major changes show that by continuing to emit [greenhouse gases](#), we are seriously upsetting a natural system that we don't even fully understand, and this system is our home.

"Our new study shows that our activities are not just causing problems for future generations. They are causing major changes now.

"Continuing on the current path of [greenhouse gas emissions](#) will lead to more serious and widespread impacts. I trust the governments meeting later this year in Paris will appreciate the gravity of this message."

The study is published in the journal *Nature Climate Change*.

Provided by University of Reading

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