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How has humanity changed the weather? Now UCT climate experts can tell you

World's first real-time service to examine the effect of greenhouse gas emissions on weather will be especially useful for Africa

It has just been the hottest hot season on record – or the driest wet season. The local television weather presenter is asked: “Are our past emissions of greenhouse gases to blame for this unusual weather event?” Until now there has been no dedicated service to address this sort of question.

A team of scientists at the Climate Science Analysis Group (CSAG) in the University of Cape Town have developed an online product to address this question. The Weather Risk Attribution Forecast is the world's first real-time service to examine how humanity's past greenhouse gas emissions have contributed to the odds of unusual weather patterns.

The question of whether past greenhouse gas (GHG) emissions are to blame for the unusual weather patterns around the world is one of the leading debates over climate change. CSAG's attribution forecast product is available for download [here](#). It runs in parallel with CSAG's seasonal forecast product, which has been running for eight years.

Along with the standard “[real world](#)” seasonal forecast, now a forecast can be produced for a hypothetical “[non-GHG world](#)” where human activities never emitted greenhouse gases. These forecasts are then compared to estimate the contribution of greenhouse gas emissions to the risk of unusual weather events.

Dr Chris Lennard, who runs CSAG's seasonal forecasts, said: "Climate change is usually discussed as being in the past or in the future, but in fact it is also very much a matter of the present. We all live in the present, but climate change is occurring fast enough that our definition of the present matters. A seasonal forecast of a hotter summer than usual, for instance, may be less informative than it appears because most summers now are hotter than what was usual just a few of decades ago."

Dr Mark Tadross, who is also at CSAG, said: "Estimates of the contribution of our emissions to a damaging event could be particularly useful for Africa. As part of the global negotiations in dealing with the climate change issue, a large amount of funding will become available in the next few years to pay for measures in Africa to adapt to climate change."

Dr Tadross adds that not only would services like this attribution forecast inform which adaptation measures need to be taken urgently, they should also assist the funding application process, by indicating whether anthropogenic climate change is already impacting livelihoods.

As the world's first weather risk attribution service, the CSAG attribution forecast will be a platform for gaining experience with different types of attribution information and how to convey the information. As project scientist Dr. Dáithí Stone noted: "By actually getting our hands dirty and running this service, we hope to better understand exactly what questions are being asked, what we can confidently say about them, and what the best forms are for presenting the answers."

Dr Stone added: "Although this is currently an experimental pilot product and no guarantee is given of its accuracy, it should still provide some qualitative indication of the effect of our greenhouse gases. We would like users to send us their comments." Dr Stone can be emailed on: stoned@csag.uct.ac.za

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