

Impact of climate change in Africa

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Africa is the continent that will suffer most under global warming. Past history gives us lessons on the likely effects of future climate change. Of greatest concern are the 'large infrequent disturbances' to the climate as these will have the most devastating effects.

In a remarkable study from the Kenyan Tsavo National Park published today in the *African Journal of Ecology*, Dr Lindsey Gillson uncovers evidence for a drought that coincided with the harrowing period of Maasai history at the end of the 19th century termed "Emutai" meaning to wipe out.

"Severe disturbance events and rapid environmental change tend to occur infrequently, but can have a lasting effect on both environment and society" says Dr Gillson. This was no-where more evident than in the case of the Maasai "Emutai". The period 1883-1902 was marked by epidemics of bovine pleuropneumonia, rinderpest and small pox. The rains failed completely in 1897 and 1898. The Austrian explorer Dr Oscar Baumann, who travelled in Maasailand in 1891, wrote chilling eye-witness accounts of the horror experienced during a large ecological disturbance:

"There were women wasted to skeletons from whose eyes the madness of starvation glared ... warriors scarcely able to crawl on all fours, and apathetic, languishing elders. Swarms of vultures followed them from high, awaiting their certain victims." (Baumann 1894, Masailand)

Ecological shocks such as that experienced by the Maasai are predicted

to be a feature of global warming. "It is important to use long-term historical and palaeoecological data to try to understand the frequency and effects of extreme events, and the way societies and ecosystems respond to them" Lindsey Gillson explains. Her work involved analysing sediments from the famous Tsavo National Park. Age of the sediments was obtained using radiocarbon dating and analysis of the pollen and charcoal fragments enabled a picture of environmental changes to be built up. "It is painstaking work, but the results were clear" says Dr Gillson "at the time of the Emutai there was a drought, an increase in burning and soil erosion: indicators of a large infrequent disturbance".

Dr Jon Lovett, who has been researching the impacts of climate change on Africa, says that we must learn from history and be prepared "Events like this are going to become more common in the future, and we need to be ready for them" he says. "Lindsey's work is important because it shows what has happened in the past, we are now forewarned. But the big question remains – will policy makers take any notice?"

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