Global warming and Mt. Kilimanjaro glacier

Science-based analyses of America's key environmental issues

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Claim: *Global warming is melting Mt. Kilimanjaro's glacier.*

The consensus on Kilimanjaro's glacier recession is **wrong**.

The recession of Kilimanjaro's ice field has become the poster child for the impacts of global warming. Some scientists, politicians and Media have been religious in blaming human activities. However, new research shows that the causes of Mt. Kilimanjaro's well-documented glacier retreat is far more complex, likely resulting from a natural climate shift that occurred more than 120 years ago, long before widespread use of fossil energy. Thus, scientific evidence informs us that the shrinkage of Kilimanjaro's ice cap is simply part of the ebb and flow of the endless cycle of nature. This represents a perfect example of why scientific "consensus" does not equal scientific truth. And why **we should not act in haste**, basing our actions on scientific conclusions that have not been thoroughly examined and tested despite being widely quoted.

An international team of researchers led by Georg Kaser and comprising experts in tropical weather, mountain glaciers, and paleoclimate took a behind-the-scenes look at the Kilimanjaro ice melt and answered the question, "Is man-made global warming responsible for the loss of Kilimanjaro's glaciers?" The answer **was a resounding "no**."

They summarize their findings as follows: A synopsis of (i) proxy data indicating changes in East African climate since ca 1850, (ii) 20th century instrumental data (air temperature and precipitation), and (iii) the observations and interpretations made during two periods of fieldwork (June 2001 and July 2002) strongly support the following scenario:

"Retreat from a maximum extent of Kilimanjaro's glaciers started shortly before Hans Meyer and Ludwig Purtscheller visited the summit for the first time in 1889, caused by an abrupt climate change to markedly drier conditions around 1880. Intensified dry seasons accelerated ablation on the illuminated vertical walls left in the hole within Reusch Crater, probably a result of volcanic activity. The development of vertical features may also have started on the outer margins of the plateau glaciers before 1900, primarily as the formation of notches, as explicitly reported following field research in 1898 and 1912. Once started, the lateral retreat was unstoppable, *maintained by solar radiation* (emphasis added) despite less negative mass balance conditions on horizontal glacier surfaces, and will come to an end only when the glaciers on the summit plateau have disappeared. This is most probable within the next few decades, if the trend continues. Positive air temperatures *have not* contributed to the recession process on the summit so far [emphasis added]. The rather independent slope glaciers have retreated above the elevation of their thermal readiness, responding to dry conditions. If the present precipitation regime persists, then these glaciers will most probably survive in positions and extents that are not much different than today. This is supported by the spatial patterns of glacier extent shown in the Thompson et al. (2002) map, which indicate that slope glaciers retreated more from 1912 to 1953 than since then.

"The scenario presented offers a concept that implies climatological *processes* **other than increased air temperature** govern glacier retreat on Kilimanjaro in a direct manner [emphasis added]. "

For full report, see (http://ff.org/centers/csspp/pdf/Kiliman-MAC-4-8-04.pdf)

Reference: Kaser, G., et al., 2004. Modern glacial retreat on Kilimanjaro as evidence of climate change: observations and facts. International Journal of Climatology, 24, 329-339.