A new study has found evidence of a link between temperature and conflict in Africa.

The report, published by the Proceedings of the National Academy of Sciences in the United States, examines the potential impact of rising temperatures on armed conflict in sub-Saharan Africa.

It found the likelihood of armed conflict increased in unusually warm years when food was scarce, suggesting that a rise in global temperatures could result in a greater number of wars.

"Hot temperatures cause crop yields to fall, farmer livelihoods to decline, and thus provide increased incentives to rebel, and because Africa is the most agriculturally-dependent region in the world, we would expect the links to be strongest in Africa," Marshall Burke, a co-author of the study and a research associate at Stanford University's Program on Food Security and the Environment, said in an e-mail message.

"The temperature effect was extremely strong" Mr. Burke said. "We tried hard to knock it down with all sorts of controls — economic growth, increase in African democratic institutions — but we still found that temperature has had a strong effect on recent conflict, and that there is little reason to think that effect will disappear over the next few decades."

Standard climate projections were used to calculate future trends, including a predicted 54 percent increase in incidences of armed conflict by 2030 and an additional 393,000 battle deaths.

The study calls for reform of African governments and foreign aid donor policies to deal with rising temperatures and concludes that more investments are needed to help Africa adapt its agriculture to climate change. These included the development of heat-tolerant crop varieties and expanding crop insurance programs to help farmers maintain their income in the face of hotter temperatures.

"We hope that policy makers will focus on adaptation funding as well as an emissions agreement," Mr. Burke said, "because the former is likely to be arguably more important over the next few decades."