

Review of: "[Commentary] Climate Change, Health, Ethics and the Sustainability of Civilization"

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Potential competing interests: No potential competing interests to declare.

The paper "Climate Change, Health, Ethics, and the Sustainability of Civilization," by C.D. Butler, is very well written. This paper is one of a few discussing climate change as one of many existing parallel acting global threats, like the risk of AI misuse, competition among species, nuclear war, biodiversity decreases, and climate change. Another important contribution of this paper is that the author explicitly names population growth as one of the important factors changing Earth's surface properties and energy balance structure, increasing long-wave radiation fluxes to the boundary layer of the atmosphere and thus increasing its temperature. The fact is that the capacity of the Earth to be a sustainable environment for a population is limited, and maybe eight billion is more than optimal.

This paper presents the topic in a qualitative way. There is existing data allowing us to quantify energy fluxes due to carbon dioxide concentration increase. Feldman et al. (2015) published in Nature the results of measurements of the carbon dioxide concentration increase in the generation of additional heat flux. It was estimated that the annual increase in energy flux over the Earth is 0.02 W m^{-2} , and from the beginning of the industrial revolution, this integrated heat flux is 1.82 W m^{-2} , but the evaluated heat fluxes due to rainforest clearing, impermeable surfaces, and Sahara desertification increase is 5.64 W m^{-2} . The average energy flux to the Earth from the Sun is 350 W m^{-2} . I think (but it should be verified) that even so small (relatively) a contribution can change the climate.

It is a good custom to define the aim of the paper in the Introduction part. This was not done. Even the Conclusion needs (in my opinion) to briefly summarize the outcomes of the paper, because most readers read the Abstract and Summary (or Conclusion).

Nevertheless, it is a good paper worthy of publishing.