

# The influence of land-use change and landscape dynamics on the climate system: relevance to climate-change policy beyond the radiative effect of greenhouse gases

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Our paper documents that land-use change impacts regional and global climate through the surface-energy budget, as well as through the carbon cycle. The surface-energy budget effects may be more important than the carbon-cycle effects. However, land-use impacts on climate cannot be adequately quantified with the usual metric of 'global warming potential'.

A new metric is needed to quantify the human disturbance of the Earth's surface-energy budget. This 'regional climate change potential' could offer a new metric for developing a more inclusive climate protocol. This concept would also implicitly provide a mechanism to monitor potential local-scale environmental changes that could influence biodiversity.

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