

Overview of the processes interacting between Earth and socio-economic systems

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Some existing studies indicate that economic carbon cycle feedbacks may be of comparable magnitude to natural climate-carbon cycle feedback. For considering the significance of the interaction between Earth and socio-economic systems, we report the result of our literature survey on the processes interacting between Earth and socio-economic systems. Existing literature indicates that agriculture/pastoralism, disease, energy (both of generation and demand), heat stress (including labor productivity), tourism have processes influenced by climate change, and as a whole there could be a significant impact by climate change on gross domestic product (GDP). However, our evaluation using a loosely coupled earth system of intermediate complexity and computable general equilibrium models indicates that the feedback to atmospheric CO₂ concentration and global mean surface air temperature is small.

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