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Effect of land use on greenhouse gas emission in tropical ecosystems

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Tropical ecosystems play an important role for the regional and global climate system through the exchange of greenhouse gases and provide important ecosystems services such as carbon sequestration, produce, and biodiversity. Human activities have, however, resulted in intensive transformation of tropical ecosystems impacting the cycling of nutrients, water and carbon underlying the greenhouse gas emissions. At the same time, best-bet agricultural practices can reduce greenhouse gas emission, those directly emitted from the agricultural fields, but also indirectly through less demand on new land and hence forest conservation.

Here, I will provide some insights into the main factors affecting the exchange of greenhouse gases from the plot to continental scale through some specific case studies. Experimental data, stable isotopes and modeling results will be presented.