

Rapidly increasing deforestation of the Amazon rainforest

Impacts on local communities and ecosystem services

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Project description

The Amazon is the largest tropical forest and offers many important ecosystem services, including the sequestration of substantial amounts of carbon, recycling of moisture and supporting biodiversity. Deforestation is one of the major threats that the Amazon is currently facing (Fig 1). Since the early 2000s the rate of deforestation in the Amazon has steadily reduced, but is rising again since ~2018 (Fig 2). Earlier research has shown that deforestation can have a short positive effect on local communities (as expressed by the Human Development Index), but that this effect does not last for long.



Fig. 1: Photograph of intact forest (left) and recently deforested areas (right) in the Amazon (source: BBC, Reuters)

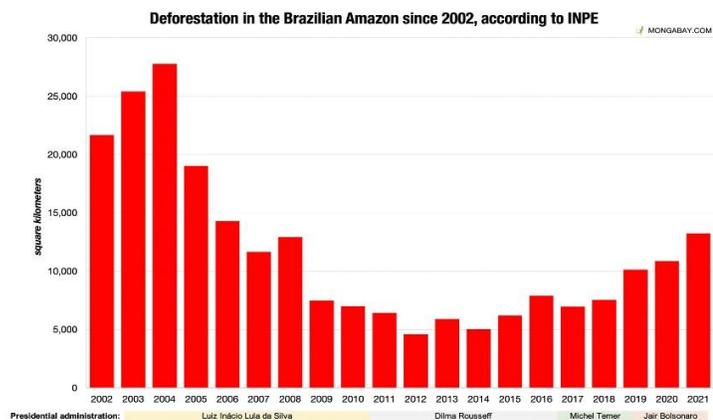


Fig. 2: Yearly deforested area of the Amazon (in km²) estimated by INPE. After years of decline (2004-2009) and a stable period (2009-2018), the rate of deforestation is again increasing (source: mongabay.com, INPE)

In this project we aim to explore the direct and indirect impacts of deforestation on human welfare and the above-mentioned ecosystem services. The research assistant will contribute to the development of a system to derive relations from spatially and temporally explicit datasets (including: deforestation data, Brazilian census data, agricultural yields, weather conditions, water and carbon fluxes, etc.) that are contributed by a group of enthusiastic team members of the Copernicus Institute of Sustainable Development. By combining many data streams we aim to provide a new perspective on deforestation.

The activities are mostly computer-based and can therefore also continue from home in case of COVID-19 restrictions. Meetings are preferably in person, but can take place virtually if circumstances require this.

Job requirements

An important requirement for this project is an interest in deforestation and its impact on ecosystem services. Some experience with models and GIS is helpful, but not a requirement.