



# Impact of elevated CO<sub>2</sub> on the Amazon rainforest

Period: 2015-2030 | Budget open-ended\*

Whether or not the forests of Amazonia will suffer from climate change is crucial for the future of Amazonian society, South-American rainfall regimes and global climate. Amazon-FACE is a large, long-term initiative to study the direct impact of future elevated CO<sub>2</sub> concentrations on the forests of Amazonia, with partners in Brazil, USA, UK, Germany and the Netherlands. The overarching question is whether increasing CO<sub>2</sub> concentrations will increase forest resilience against detrimental effects of climate change, as a result of its stimulating effects on photosynthesis and water use efficiency. The most important scientific challenge is to determine the degree to which poor soils, in particular those with extremely low phosphorus, will limit these stimulating effects.

The experiment, located in an undisturbed forest reserve north of the city of Manaus (Amazonas state, Brazil), consists of a total of four replicate planned plot pairs of 30 m diameter, where CO<sub>2</sub> will be artificially elevated by 200 ppm above ambient. The forest, trees and soils, and their dynamic physiology will be monitored in detail during the experiment. After installation of CO<sub>2</sub> fumigation, the experiment is planned to last for about 10 years. In addition to the direct effects of CO<sub>2</sub>, we will study the impacts of and possible adaptation to climate change in society of the wider Amazonia.

\*To be identified for WUR

---

**More information:**

[www.wur.eu/amazon-face](http://www.wur.eu/amazon-face)  
<https://amazonface.inpa.gov.br>

**Contact:**

Bart Kruijt | [bart.kruijt@wur.nl](mailto:bart.kruijt@wur.nl)