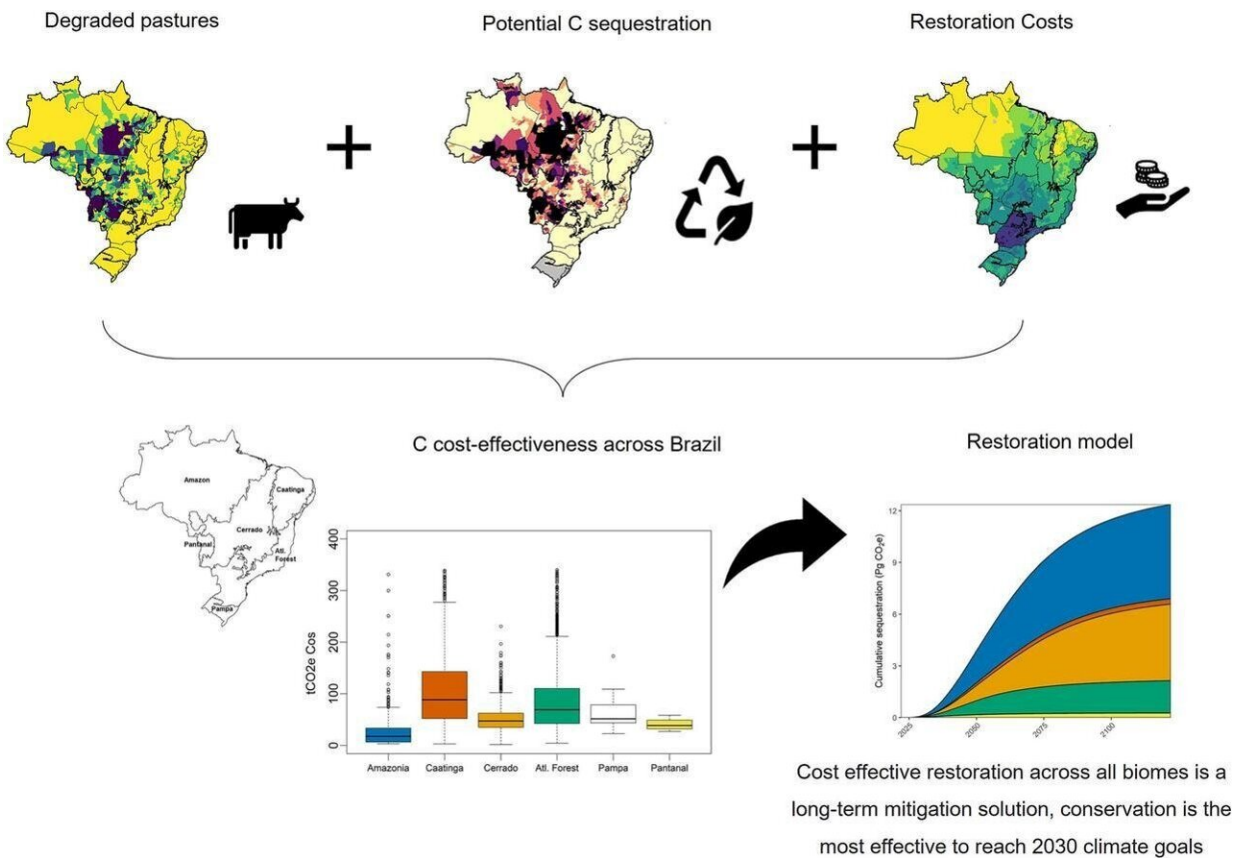


Dry forests and savannas vital for Brazil's climate goals

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Graphical abstract. Credit: *Science of The Total Environment* (2023). DOI: 10.1016/j.scitotenv.2023.162600

Brazil must protect and restore its dry forests and savannas to achieve its climate goals, new research shows.

Attention in Brazil and worldwide often focuses on the Amazon rainforest—ignoring damage and destruction of these seasonally dry biomes, which contain vast biodiversity and carbon stores.

The new study, led by the universities of Exeter and Campinas, says cost-effective restoration of dry biomes could lock in almost 10 billion tons of carbon by 2050-80.

But restoration takes time, and the researchers say protecting existing [ecosystems](#) is the best option for Brazil to reach its 2030 [climate goals](#).

"Ongoing land-use change—especially the destruction of ecosystems to create [agricultural land](#)—makes Brazil the world's fifth-biggest greenhouse gas emitting country," said Dr. Lucy Rowland, from Global Systems Institute at the University of Exeter.

"But Brazil also has huge potential for [ecosystem restoration](#)."

"Focus on the Amazon is understandable, but this has often simply displaced the problem of ecosystem destruction to the Cerrado (savanna) and the Caatinga (dry forest)."

"This has been done on the assumption that these ecosystems are worthless—when in fact they have plant species diversity that rivals the Amazon."

"There is huge potential to restore these areas without negative impacts of food production or people's livelihoods."

Global carbon markets provide a financially viable way to fund large-scale restoration.

The study combined carbon prices with information such as land

availability and carbon storage for 5,475 Brazilian municipalities to assess the potential costs and benefits of restoration.

"We argue that even with a sole focus on carbon, we must restore other tropical biomes—not just rainforests," said Dr. Fernanda de Vasconcellos Barros, also from the University of Exeter.

"Adding [dry forests](#) and savannas doubles the area which could be restored in a financially viable manner, increasing the potential carbon storage by more than 40% above that offered by rainforests alone."

"Importantly, we show that conservation will be essential for Brazil to achieve its 2030 climate goal, because it can sequester 1.5 to 4.3 billion tons of carbon dioxide."

"Restoration takes longer, and so can have less impact by 2030, but in the long-term restoration across all biomes in Brazil could draw down between 3.9 and 9.8 billion tons of carbon dioxide by 2050-80."

The paper is published in the journal *Science of The Total Environment*.

More information: F.de.V. Barros et al, Cost-effective restoration for carbon sequestration across Brazil's biomes, *Science of The Total Environment* (2023). [DOI: 10.1016/j.scitotenv.2023.162600](https://doi.org/10.1016/j.scitotenv.2023.162600)

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