DATA SOLUTIONS TO FACE CLIMATE CRISIS

Land use change in South America and Indonesia in the last four decades

MapBiomas is a dynamic network, weaving together NGOs, universities, and cutting-edge tech startups. This collaborative force reveals the transformations across our diverse world landscapes, employing the power of science and open data to democratize understanding of land use change in the tropics.

Year after year, MapBiomas shows essential data on the ever-evolving land cover and land use. At the same time, its vigilant gaze scans the Earth, capturing the water surface dynamic and the dramatic scars left by fires. We also host the MapBiomas Alert, an innovative open-access platform with high resolution imagery and detailed spatial analysis for each and every deforestation event detected in all Brazilian biomes from January 2019 on, scaling up and revolutionizing the fight against deforestation.

Download links:
- All Landsat satellite images in the last 38 years (30m resolution)
- Collaborative network:
  - 14 countries
  - 70 institutions
  - 280 people from universities, NGOs, tech startups
- Annual and monthly data at 30m to 10m resolution since 1985
- Cloud processing using artificial intelligence and Google Earth Engine platform

For more information: mapbiomas.org

Credit for the cover’s image: NASA/Goddard Space Flight Center Conceptual Image Lab
Mining expansion
In 2022, the mining area in the Amazon expanded by 593 thousand hectares (more than 14x the area in 1985), of which 107 thousand ha was in Indigenous Lands.

Indonesia
Mining Pit is the anthropic use with the greatest percentage gain, 334%
Oil Palm is the anthropic use with the greatest area gain, 10,52 Mha, where 73% of the area in 2000 was native vegetation.

33% of the anthropic areas were converted in the last 38 years in Brazil

9% of the deforestation was outside Indigenous Lands or other Protected Areas in the Amazon
91% of the deforestation of Indigenous Lands (2.9 Mha) in the Amazon has been lost since 1985. They are the most protected area in the biome.

Emissions and forest degradation
Annual and monthly maps of burned areas in Brazil since 1985. To find out more, visit the platform plataforma.brasil.mapbiomas.org/fogo

91% of the deforestation in the Amazon is outside Indigenous Lands or other Protected Areas.

9% of native vegetation in Brazil is secondary

1.2% of the native vegetation of Indigenous Lands (2.9 Mha) in the Amazon has been lost since 1985. They are the most protected area in the biome.

43% of native vegetation by land tenure

1.7% of the native vegetation cover (3.7 Mha) in other protected areas in the Amazon has been lost.

15% of natural grassland loss since 1985 with agriculture and planted forest expansion in Brazil, Uruguay and Argentina

15 million hectares of native vegetation loss in Indonesia from 2000 to 2022

WHERE WE ARE
EXPLORING THE LAND USE DYNAMIC AND PRESSURES ACROSS MULTIPLE TERRITORIES

Native vegetation area by land tenure

Protected areas 203 Mha

Public Land 114 Mha

Private Land 224 Mha

Protected areas 203 Mha

Public Land 114 Mha

Private Land 224 Mha

64% of Brazil is native vegetation (543 million hectares in 2022)

64% of Brazil is native vegetation (543 million hectares in 2022)

Brazil revealed
Most detailed time series of annual maps of land cover and land use in Brazil:
29 classes and 38 years (1985-2022)
A new collection of maps updated and improved every year

TRANSPARENCY AND ACCOUNTABILITY
Over 368,000 deforestation events totalling 7.9 million hectares in all Brazilian biomes since 2019. This system validates and refines alerts using high-resolution satellite images (4m) and provides spatial analysis, including intersection with protected areas, rural properties and indications of illegality.

Water crisis and food system
Natural water surface loss tendency in Brazilian watersheds and Amazon region. To find out more, visit the platform plataforma.brasil.mapbiomas.org/agua

AMAZON

The importance of Indigenous Lands in the Amazon
The Amazon is the only biome with more than half of its native vegetation inside protected areas where Indigenous Lands are the most efficient in hindering deforestation.

Oil Palm

The Cerrado is one of the hottest agriculture expansion frontiers in the world - the biome has already lost half of its native vegetation, mainly to pasture and soy.

CERRADO

In 2022 the forest covered 24% of the biome. Paraguay lost 2.7 million hectares of Atlantic Forest (-57%) between 1985 and 2022

The Chaco has one of the world's highest conversion rates, due to large scale cattle and soy expansion, mainly in Paraguay and Argentina.

CHACO

PAMPA

Except the Amazon, all the biomes in South America have less than 20% of their native vegetation protected, the Pampa biome is the least protected (only 3%).

ATLANTIC FOREST

Paraguay lost 2.7 million hectares of Atlantic Forest (-57%) between 1985 and 2022

In 2022, 3% of the total Brazilian urban area is at risk while 18% of the Brazilian favela area is at risk
Brazil has 123 thousand hectares of urban areas in regions susceptible to floods, landslides, droughts and other climate disasters.
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