



INTER-AMERICAN INSTITUTE FOR GLOBAL CHANGE RESEARCH

TROPI-DRY

Human, ecological and biophysical dimensions of tropical dry forests (SGP-CRA 2021)

Tropical dry forests (TDF), with their high agricultural and touristic potential and ideal conditions for human settlement are extremely vulnerable. This research network is developing a comprehensive knowledge basis of the human and biophysical dimensions for TDFs in the Americas.

Goals

- Understand the role of tropical secondary forests play on interception of precipitation at regional level.
- Quantify CO₂ and H₂O emissions from tropical dry forests to support programs for payments for environmental services based on accurate carbon and water models.
- Develop innovative links between government agencies, scientists, and communities to promote sustainable management of TDFs.

First results

- We have been able to quantify carbon and water fluxes from tropical dry forests in Mexico and Costa Rica under different levels of environmental stresses.
- Our research has been able to document significant linkages between remote sensing observations, micro-meteorology and vegetation stress for tropical dry forests not previously documented.
- Our results in Mexico and Costa Rica suggest that regeneration of tropical dry forests increases rainfall interception by close to 80% after 5-years since colonization starts. The former has significant impact on regional water management in semi-arid and arid regions of the Americas.
- In the context of climate change, tropical dry forests are demonstrating significant levels of resilience not previously documented.
- Tropical dry forests in Mexico and Brazil are those with significant responses to climate change. These forests are demonstrating a significant decrease in productivity in the last 30-years.

Principal investigator and lead agency

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Project web site: <http://tropi-dry.eas.ualberta.ca>

List of publications: http://tropi-dry.eas.ualberta.ca/2_datapub.html



Installation of phenology monitoring station, Minas Gerais, Brazil



View of a tropical dry forest in the wet season



Same tropical dry forest in the dry season

