

Rebuilding the Brazilian Rainforest

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Over the last 3 decades, small farmers settling in the western Brazilian Amazon state of Rondonia have converted over 60,000 square kilometers (25%) of the state's tropical forest to various agricultural land uses reducing biodiversity, aggravating global warming, and degrading local watersheds. Our research, supported by the National Science Foundation and the John and Teresa Heinz Charitable Trust, seeks to understand the social processes of land cover change by integrating experimental agroforestry planting practices with remote sensing and household surveys. The project, spanning a 12-year period from 1992 to 2004, examined the conditions under which agroforestry can be effectively used to "rebuild" tropical forests.

The initial findings of this experimental research indicate that of the several different types of agroforestry packages (e.g. timber-based, perennial fruit-based, or mixed), successful forest restoration is more likely when farmers employ a timber-based system (i.e. based on the planting of commercially valuable, but slow growing hardwoods). Farmers doing so are more likely to allow natural secondary successional vegetation to mature around the seedlings of planted hardwoods, thereby catalyzing reforestation in abandoned clearings surrounding the experimental agroforest plots.

Key words: land use, land cover change, agroforestry, Brazilian Amazon

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