

Poster Abstract

Modeling Artificial Sociality: The influence of social relations on farmers' land-use decisions in tropical forests

In this study we introduce SESAMSIM, an agent-based model which simulates the behavior of farmers from a relational perspective to explore their land-use decisions in tropical forests. The model is based in the status-power theory of relations. Farmers' social relationships with institutions, collectives and other individuals – what we call reference groups – guide their behavior and decision making processes. These reference groups are important to farmers because they confer status (agreement, rewards, support) or use power (disagreement, coercion, punishment), both of which can, to varying extents, influence farmers' land-use decisions. SESAMSIM (Scenario Evaluation for Sustainable Agroforestry Management) is a simulation that models different social relations and their impact on land-use change scenarios in agroforested landscapes. The model explores land-use change decisions from the perspectives of farmers with different identities: mestizos and indigenous, both men and women. It is based on empirical data (qualitative and quantitative) obtained through ethnographic methods and serious games in the Amazonian province of Morona Santiago and the Andean Choco Biosphere Reserve in Ecuador in 2021 and 2022. We used qualitative data to define reference groups, land-use options and transitions, and quantitative data to calibrate variables, such as the importance of reference groups, status conferrals, use of power and land-use conversion. We aim to answer the following questions: 1) How does the importance of reference groups shape the landscape in tropical forests: does changes in their importance translates in changes through the landscape? 2) How do social relations between farmers and their reference groups change when status conferrals and the use of power occur in different magnitudes? And 3) which are the consequences for land-use, forests and water? SESAMSIM is an interactive tool that allows the simulation of different relational scenarios in tropical forests, where contested worldviews of different groups shape the fate of biologically and culturally rich territories.