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**Multi-agent system for simulation of land-use and land cover change:  
A theoretical framework and its first implementation for an upland  
watershed in the Central Coast of Vietnam**

Land-use/cover change is one of the most disturbing human-induced changes of the natural environment. This study presents a multi-agent model to simulate spatiotemporal land-use changes and community dynamics in forest margins, emerging from household interactions and land-use policies. The study integrates calibrated models of land-use decision making and relevant ecological processes into structures of household agents and land automata, providing a coupled human-landscape system. The operational model allows the systematic generation of integrated land-use change scenarios resulting from changes in policy and, once validated, will provide a scientific basis for optimizing the management of land and forest resources.