

Fostering knowledge sharing about agroforestry systems through the codesign of a role-playing game with farmers and students from the Municipality of Irituia (Northeast Para, Brazil)

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Abstract

The companion modelling approach aims at stimulating social learning among stakeholders through the interactive use of agent-based simulation models. In the Municipality of Irituia (Northeast Para, Brazil), such a process was initiated to enhance knowledge sharing among farmers, researchers and students about forest restoration. A first version of a stylized yet empirically grounded model of 4 similar 25-ha family farms was first designed by a group of researchers. This tool, clearly unfinished, can be seen as a sketch to initiate the co-design process: an important work of progressive shaping and improvement is needed so that it acquires its final form and becomes usable with people who were not involved in its design. Handled as a role-playing game (the actions of the farmers are decided by the participants), the tool was first introduced to a group of farmers who were selected because of the experience in agroforestry systems. Eliciting their knowledge and formalizing their practices allowed us to propose archetypes of agro-forestry systems. The game was first tested by students from Itabocal, a rural school of Irituia Municipality. In the game, when deciding to start agro-forestry, a participant has to select a type of pre-defined agro-forestry system. The growth of the plants is simulated by the computer model and a set of indicators is provided to the players for them to assess the balance between environmental and socioeconomic benefits. The model was fine-tuned through a series of successive workshops. We describe how it enabled fostering knowledge sharing among students, farmers and researchers.