2-day Workshop: Agent-based modelling with NetLogo

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Organizers: Claudia Dislich & Jan Salecker

Contact address: claudia.dislich@forst.uni-goettingen.de

Agent-based, or individual-based modelling is an increasingly used technique to investigate questions in ecology, biology and social science. Generally speaking agent-based models are simulation models which are used to study how local interactions of individual agents give rise to higher level dynamics. The agents in a model can for example represent plants, animals, humans or other objects. In ecology, prominent examples for individual-based models are forest models, in which the growth of individual trees depend on the competition with other trees in their neighborhood, or fish school models, in which the movement of fish swarms emerges through the movement behavior of individual fish. Agent-based models of land-use change incorporate decision making processes of human agents and potentially also interactions between agents to study the effect of human actions on the environment at the landscape level. Thereby such models link social and environmental processes.

This two-day workshop will give an introduction in agent-based/individual-based modelling. The open source modelling platform NetLogo, which is specifically designed for the development of agent-based models, will be introduced. During the workshop course participants will learn how to implement and evaluate simple models. No programming skills are required for this introductory workshop.
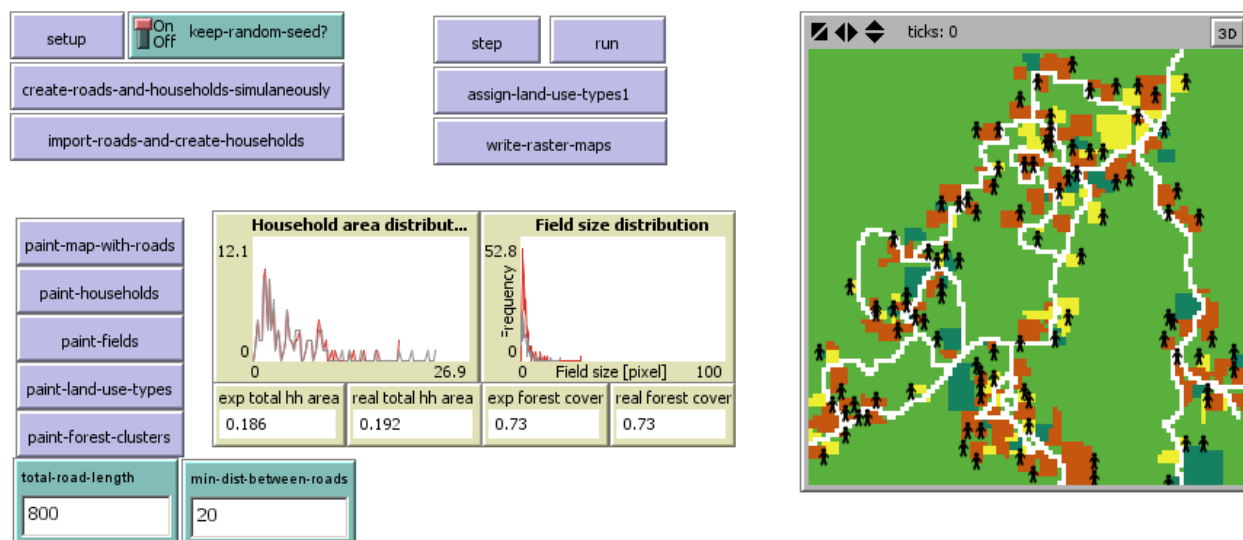
Snapshot of a land-use change model implemented in NetLogo