B10 – Landscape-level assessment of ecological and socio-economic functions of rainforest transformation systems

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Guiding question

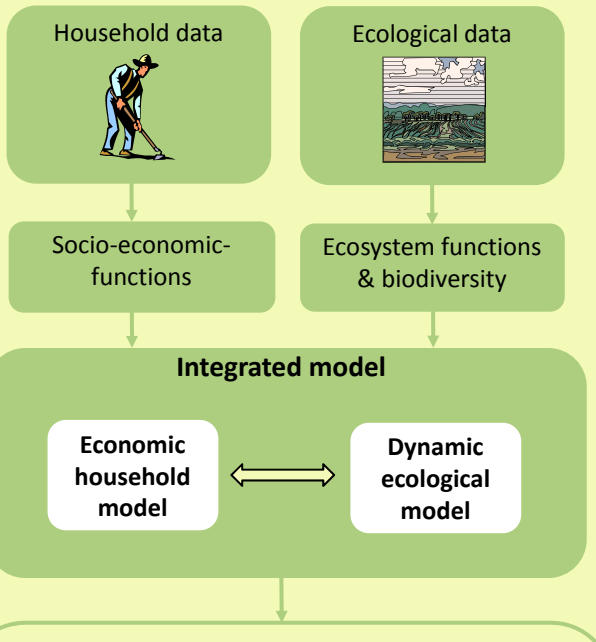
What kind of landscape mosaic is needed to improve the ensemble of biodiversity, ecosystem functioning and economic benefit? How can we optimize a mosaic landscape?

Overall aims

- To identify synergies and trade-offs within and between ecological and socio-economic functions
- To scale up in space and time from local to landscape scales

Approach

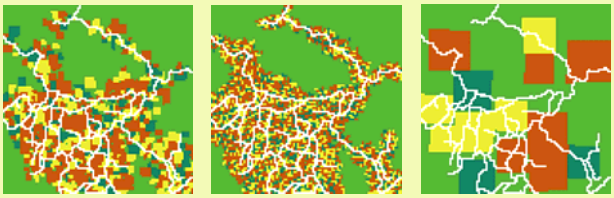
We are developing an **agent-based integrated model** of ecological and socio-economic functions.



Outlook

- Comparison of land-use types concerning different ecological and socio-economic functions
- Identification of synergies and trade-offs between functions
- Analysis of the role of spatial arrangement for these functions (landscape level)
- Optimization of landscape mosaic under constraints
- Derivation of hypotheses for future empirical work
- Analyses of land-use and policy scenarios

Model Overview



Realistic and artificial landscapes

Initialization (Landscape generator)

Economic household model (agent-based)

Dynamic ecological model

Land management decision based on
- Economic state of household
- Expected future profits
- Inefficiency of households