Congo Basin Forests: Resilience and Tipping points.
Third, logic that can’t be put in equations can still be rigorously modeled. And logic can describe things math can’t. The field of “complexity economics” avoids or reduces equation filtering and equilibrium shortcutting by using “agent based modeling.” Agents with conditional scripted logic can make choices not easily summarized in algebra. And scripts can be diverse, including maximizers, muddlers, and various rules of thumb, or maxims, or “cognitive biases.”
Companion Modelling is an interactive process facilitated by evolutionary models used as mediating tools to support dialogue, shared learning & collective decision-making.

The modeling and simulation activities are driven by end users interest.
**B0 – ComMod: a participatory modelling approach**

Stakeholders and researchers learn together by creating, modifying, observing and assessing simulations.

**Knowledge, perceptions, behavior, and practices evolve along the process and can lead to collective action plans and better community mobilization to implement them.**
First objective: research on complex systems
=> to share and to produce knowledge on social-ecological systems

Second objective: action research
=> to support and to improve collective decision-making on a key NRM / land management problem

In practice, both objectives often implemented simultaneously => be explicit about the main one!
Guiding principles include:

- taking **equal account** of all identified stakeholder knowledge and viewpoints;

- **transparency**: each idea must be explicit and submitted for approval by participants (experts and field actors);

- **iterative and adaptive nature**: each new element can modify the process;

- **evaluation** of outcomes, not only in terms of technical outcomes but also in terms of collective learning outcomes, as seen in the evolution of viewpoints and interactions among stakeholders.
Companion Modelling
A Participatory Approach to Support Sustainable Development
Block 1: Objectives, context, participants

Block 2: Co-construction of the conceptual model

Block 3: Implementation

Block 4: Exploration and simulations

Block 5: Monitoring and evaluation

1. Sensitizing those involved in development issues to the ComMod approach and its possible applications in local problems.

2. Definition of the question raised between project holders.

3. Inventory of scientific, lay or expert knowledge, available through surveys, diagnostic studies and analysis of the existing literature.

4. Eliciting knowledge for the model through surveys and interviews.

5. Co-construction of the conceptual model with stakeholders concerned by the issue at stake.

6. Choice of a modelling tool (computerized or not) and implementation of a model.

7. Calibrating, verifying and validating the model with local stakeholders.

8. Definition of scenarios with local stakeholders.

9. Exploratory simulations with local stakeholders.

10. Monitoring and evaluation of the effect of the process on the practices of the participants.

11. Diffusion among stakeholders who have not participated in the process.

12. Training stakeholders interested in using the tools developed.
project structure

cofortips

embedding results

wp 5: fostering dialog

wp 0: project coordination

wp 1: resilience landscapes

wp 2: drivers of change

wp 3: integrated platform

wp 4: biodiversity scenarios

identifying tipping points

wp 1: resilience landscapes

wp 2: drivers of change

program management

wp 5: fostering dialog

advisory group

steering committee

constructing scenarios

wp 3: integrated platform

wp 4: biodiversity scenarios

project coordination
WP4

- Participatory design and analysis of scenarios

Task 4.1. Constructing a locally relevant integrated platform.

Task 4.2. Outlining the scenarios

Task 4.3. Unfolding the scenarios
CoForTips Gantt diagram (2013-2015)

- task 0.1
- task 0.2
- task 0.3
- task 1.1
- task 1.2
- task 1.3
- task 1.4
- task 1.5
- task 2.1
- task 2.2
- task 2.3
- task 3.1
- task 3.2
- task 3.3
- task 4.1
- task 4.2
- task 4.3
- task 5.1
- task 5.2
- task 5.3
- task 5.4
- task 5.5

Work Packages
Selected sites along a gradient illustrating the forest transition

Makokou (Gabon)

Mindourou, (Cameroun)

Guefigue (Cameroun)
Congo Basin Forests: Resilience and Tipping Points. Scenarios of Biodiversity and Offsetting Mechanisms