Institute of Social Ecology

ÖSTERREICHISCHE AKADEMIE DER WISSENSCHAFTEN

Pyrenean mountain pastures: Modelling land-use change and ecosystem impacts under climate change

Authors: **Claudine Egger**[1], Andreas Mayer[1], Veronika Gaube[1], Christoph Plutzar[1], Dirk Schmeller[2] , Adeline Loyau[2]

[1] Institute of Social Ecology, University of Natural Resources and Life Sciences, Vienna (BOKU)

[2] Ecolab Toulouse

A story of...

Institute of Social Ecology

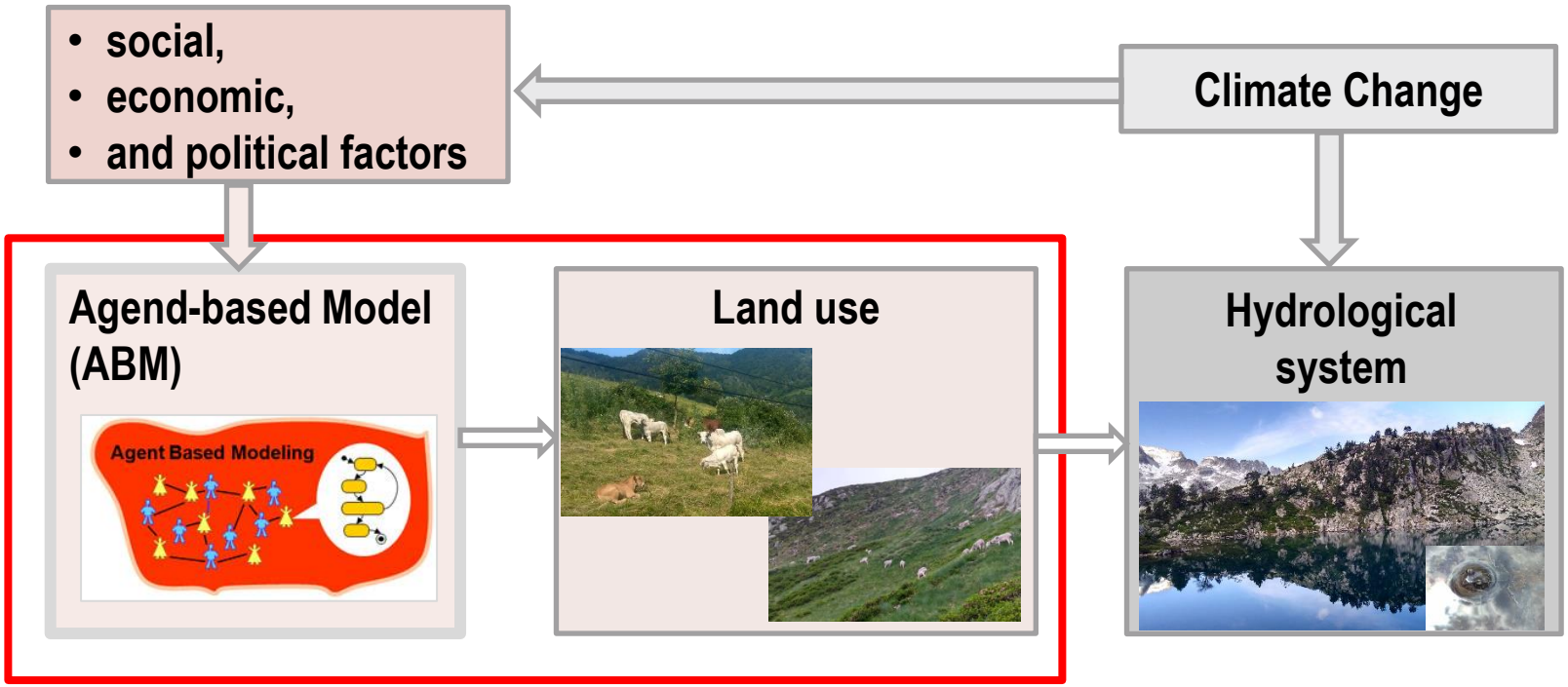
sheep

frogs

and cows

Project goal: Understanding the relations between land use and ecosystem change

Institute of Social Ecology



- We explore anticipated systemic feedbacks between land owner's decisions on land use, land-use change, climate change and their impacts on ecosystems

Agent-based modelling

Institute of Social Ecology

- Agents represent real-world actors (**farms**) and their interactions

embedded in environment

- socio-economic
- biophysical

goal oriented

- time happiness
- income happiness

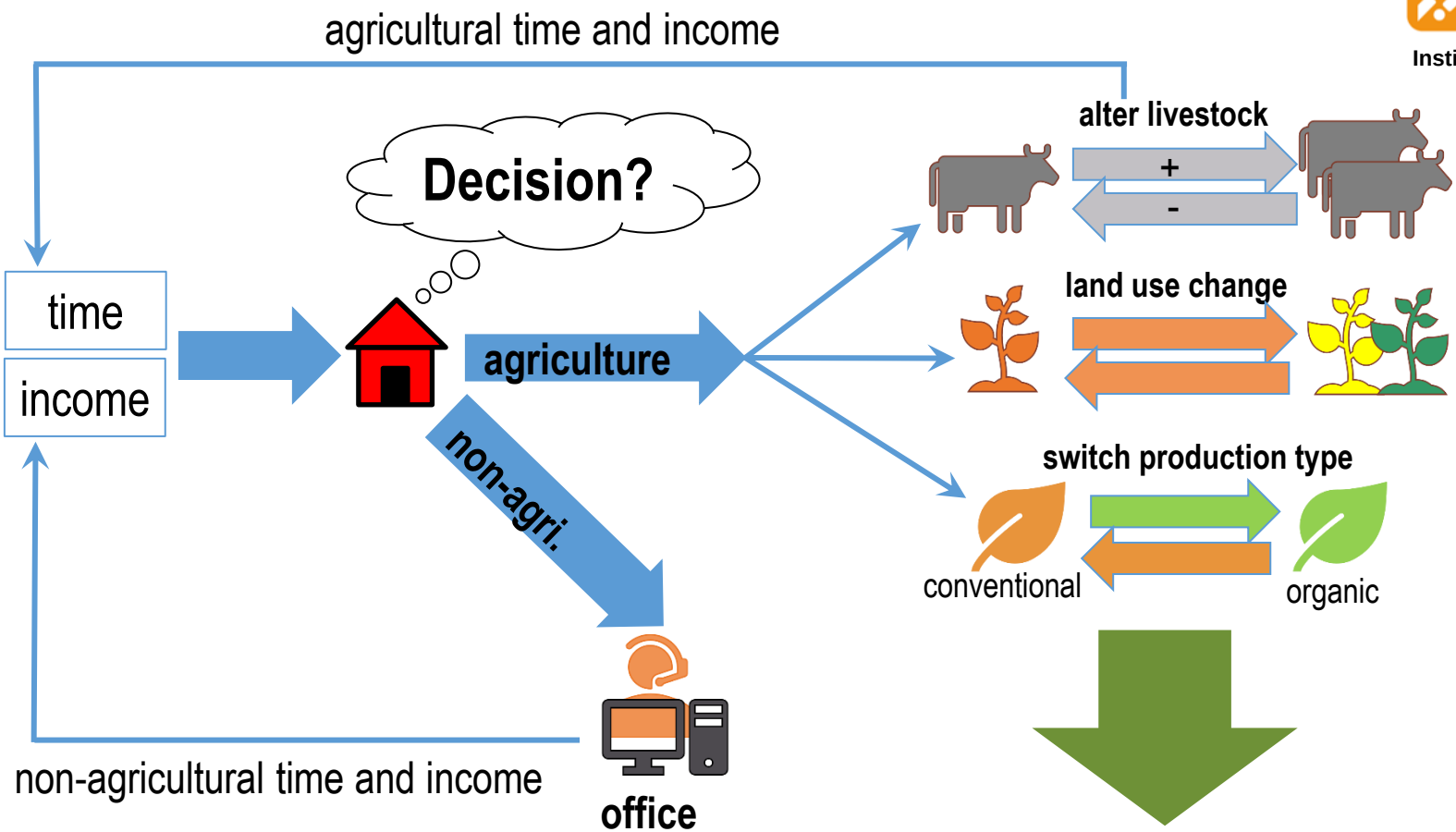
autonomous and self-directed

decision-making lead by characteristics and rules

- farm type (crop/animals)
- farming style (idealist vs. traditionalist)
- production type (conv./org.)

Our Agent-based model: SECLAND

Institute of Social Ecology



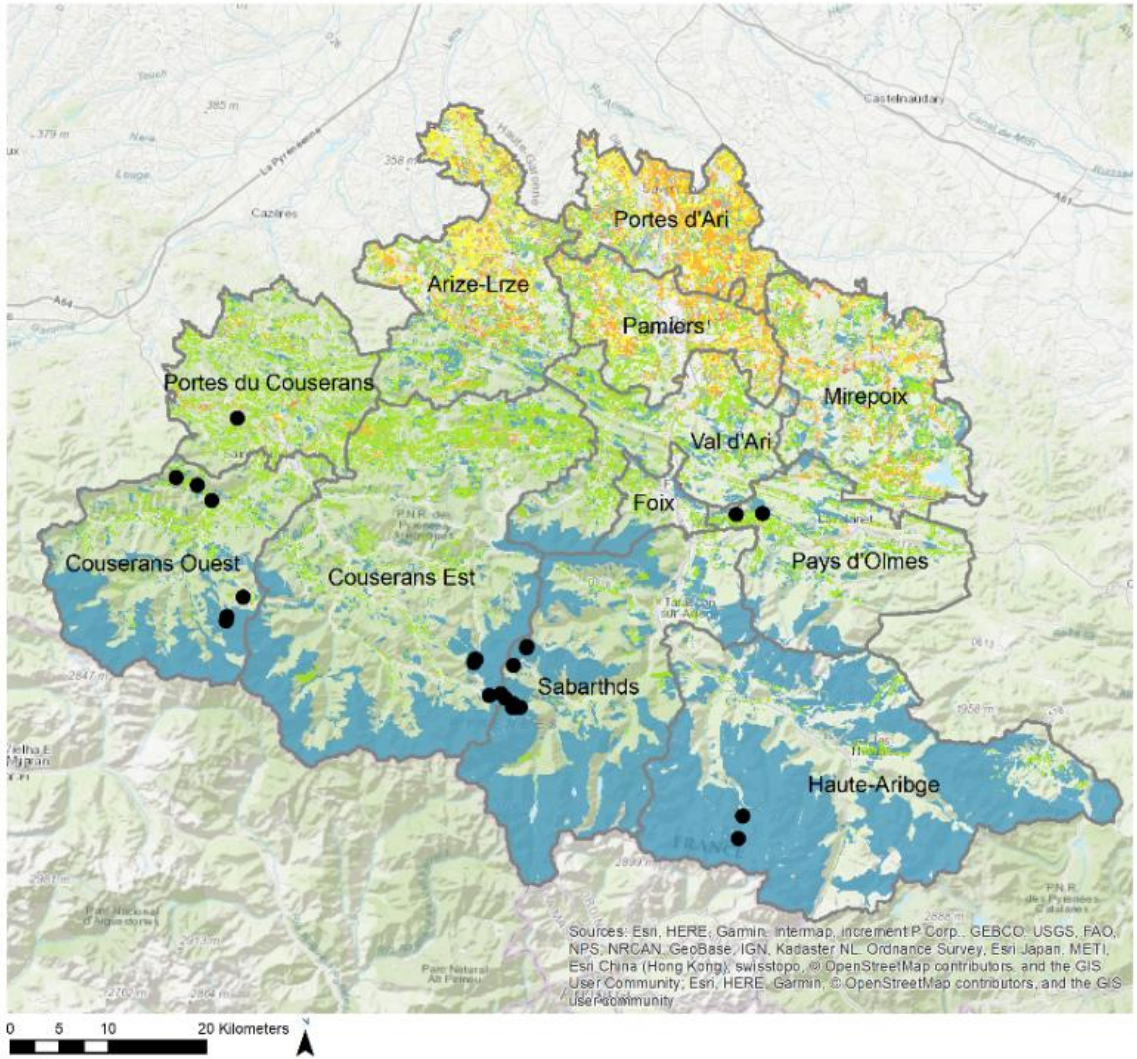
- changes in (mountain) land use
- changes in livestock (number, type)

Study site: Department Ariège (FR)

Institute of Social Ecology

- Amphibienlaichgewässer, die im Belmont Forum Projekt "People, Pollution and Pathogens" untersucht werden

- Andere Getreidearten
- Andere Industriepflanzen
- Andere Ölsaaten
- Brache (Oberflächen ohne Produktion)
- Dauerwiesen
- Faserpflanzen
- Futter
- Gemüse oder Blumen
- Gerste
- Körnerleguminosen
- Maiskorn und Silage
- Nüsse
- Obstgärten
- Protein
- Raps
- Sommerweiden und Heiden
- Sonnenblume
- Temporäre Wiesen
- Verschiedenes
- Weichweizen
- Wein



Institute of Social Ecology

ÖSTERREICHISCHE AKADEMIE DER WISSENSCHAFTEN

Thank you for listening!

Further information:

www.p3mountains.org
https://www.gisualize.org/lubio/

Email:

claudine.egger@boku.ac.at