Open Archive Toulouse Archive Ouverte (OATAO)

OATAO is an open access repository that collects the work of Toulouse researchers and makes it freely available over the web where possible.

This is an author-deposited version published in: http://oatao.univ-toulouse.fr/ Eprints ID: 17485

**To cite this version:** Salliou, Nicolas and Barnaud, Cécile and Monteil, Claude and Vialatte, Aude and Choisis, Jean Philippe *Are farmers interested in involving landscape complexity in their pest regulation strategies?* (2016) In: International Conference on Ecological Sciences - Sfécologie 2016, 24 October 2016 - 28 October 2016 (Marseille, France). (Unpublished)

Any correspondence concerning this service should be sent to the repository administrator: staff-oatao@listes-diff.inp-toulouse.fr
Are farmers interested in involving landscape complexity in their pest regulation strategy?

Salliou Nicolas, Cécile Barnaud, Claude Monteil, Aude Vialatte, Jean-Philippe Choisis
A complex landscape favors natural enemies (Chaplin-Kramer et al. 2011)

Benefit to Farmers (ES)

High potential for collective action (Stallman 2011)

Landscape management?

Ecological function

Engineering complex landscapes?
« Innovating in agro-ecosystem design often means that groups and resources are to be built up with stakeholders themselves » (Berthet 2013)
Modelling with stakeholders

- A **modelling attitude** (posture) which actively seeks to get involved with stakeholders and their social needs

- A modelling approach which is **iterative**, **adaptative** and **exploratory**
A intensive tree fruit production area
Ecosystemic dependances?

Question: Is there ecosystemic dependances regarding biological control by conservation?

Modelling: Individual interviews and mental models of local stakeholders
Ecosystemic dependances?

- Human
- Landscape
- Natural enemies
- Pests
- Crop
- Farmer

Producing an ecosystem service

Benefiting from the ecosystem service
Ecosystemic dependances?

- Human
- Landscape
- Natural enemies
- Pests
- Crop
- Farmer

Almost no interactions
Regular interactions
Very common interactions
Ecosystemic dependances?

For interviewees the landscape is not source of natural enemies but potential damages.
New question:
Why such a knowledge gap between local stakeholders and landscape ecology findings?

Are there ecosystemic dependences regarding biological control by conservation?

Individual interviews and mental models of local stakeholders
Question: Why such a knowledge gap between local stakeholders and landscape ecology findings?

Modelling: Participatory Bayesian modelling about individual stakeholder representations (Scientific vs. Locals)
Towards individual Bayesian models

Collective construction of a shared socio-ecological conceptual model

Individual parameterization and scenario exploration
Bayesian Network

Supply chain

Agricultural practices

Modelling #2
Bayesian Network

Modelling

#2

Landscape variables

Ecological variables
Scenario: complex landscape

Most stakeholders have representation of a complex landscape having an effect on natural enemies variable and pests.
Scenario: complex landscape

All stakeholders do not associate a complex landscape with significant benefits regarding the production variable.
Why such a knowledge gap between local stakeholders and landscape ecology findings?

Participatory Bayesian modelling about individual stakeholder representations (Scientific vs. Locals)
Conclusion

- Landscape complexity does not appear here to be in the interest of local stakeholders

- Need for more studies linking more explicitly potential ecological function with social demands

- Questioning the regular approximation that ecological function = ecosystem services.
Thank you for your attention

More information?
nicolas.salliou@inra.fr