

Social-ecological modelling as a boundary object to implement inter- and transdisciplinary approaches of forests in transitions

Clara Therville, Vanessa Cholez, Marieke Blondet, Nicolas Martin-St Paul, Xavier Morin

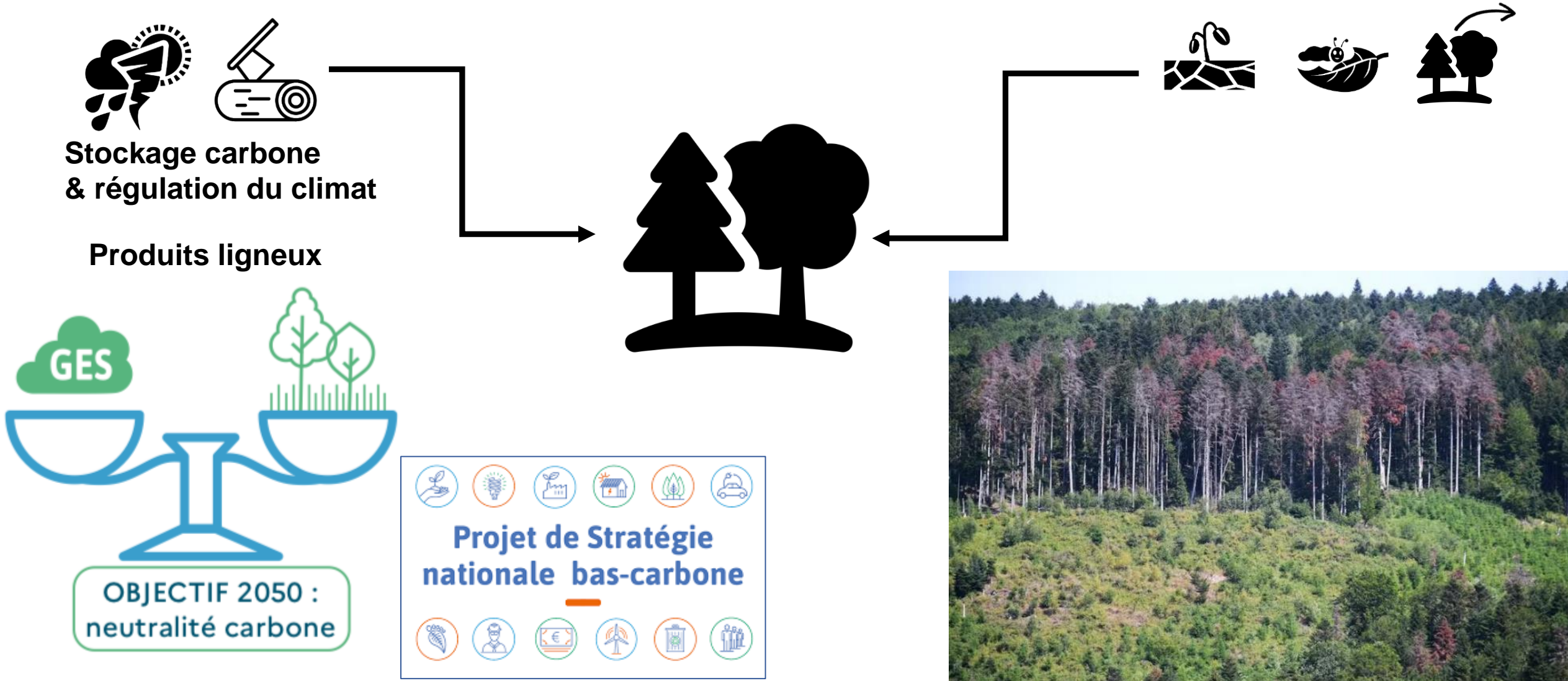
clara.therville@ird.fr


PRC 2021-2026



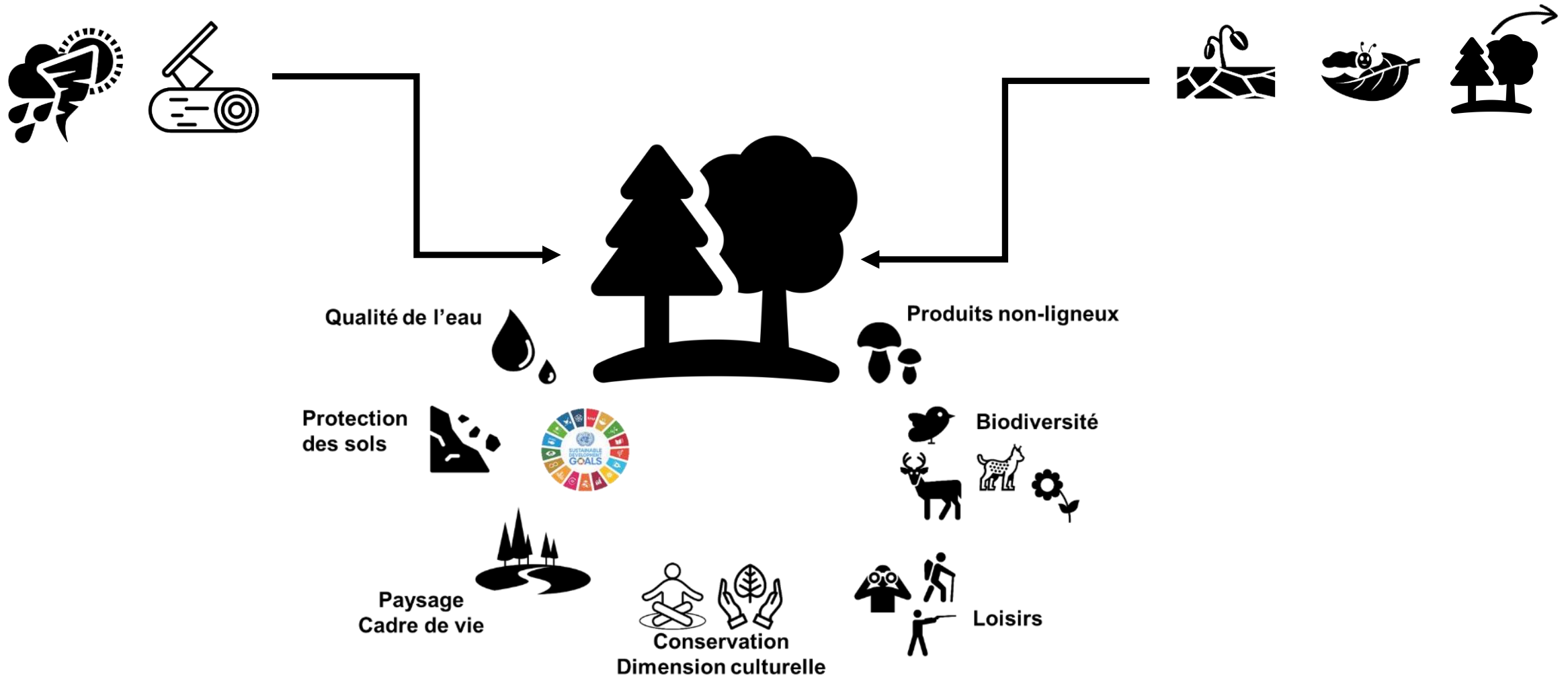
FISSA : inter- and transdisciplinary approaches of forests in transition

A paradox: French forests as mitigation tools, but facing vulnerabilities and adaptation challenges



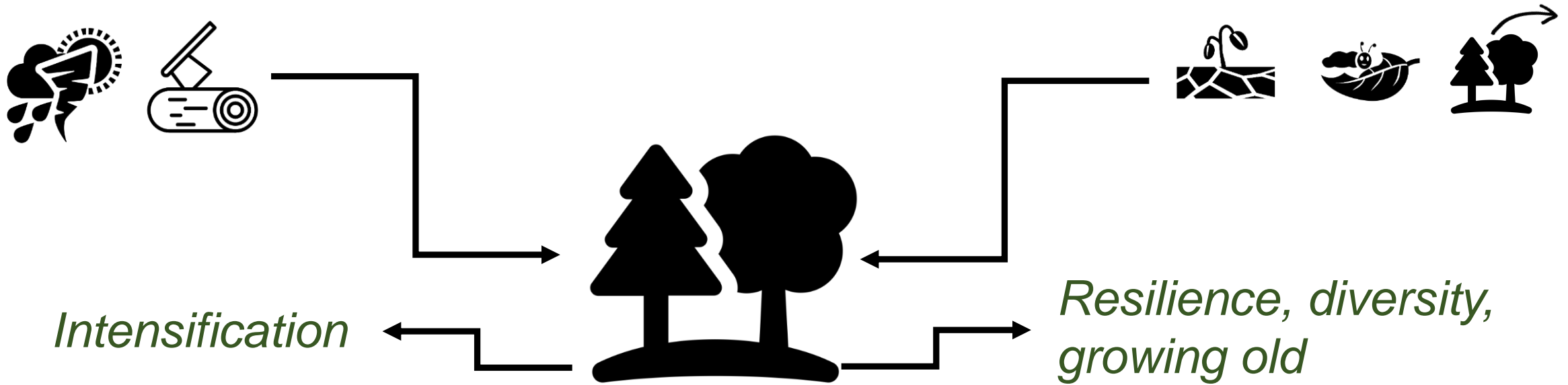
FISSA : inter- and transdisciplinary approaches of forests in transition

A paradox: French forests as mitigation tools, but facing vulnerabilities and adaptation challenges



FISSA : inter- and transdisciplinary approaches of forests in transition

A paradox... and a controversia regarding management

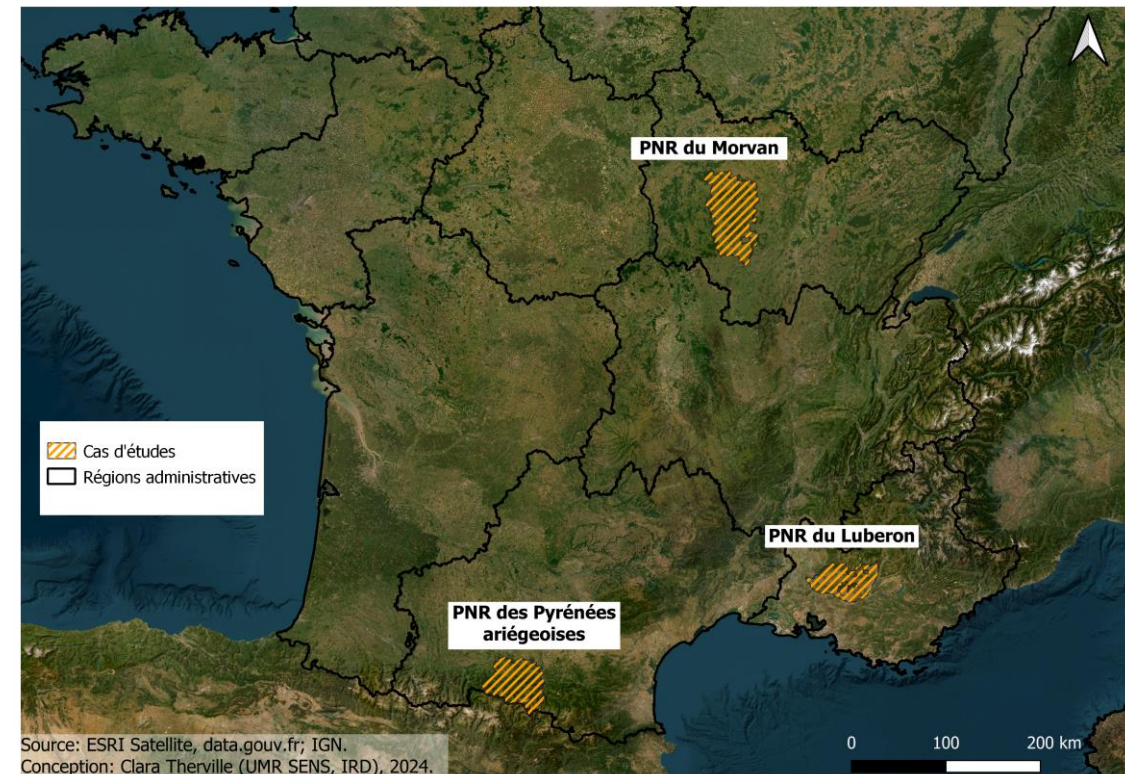
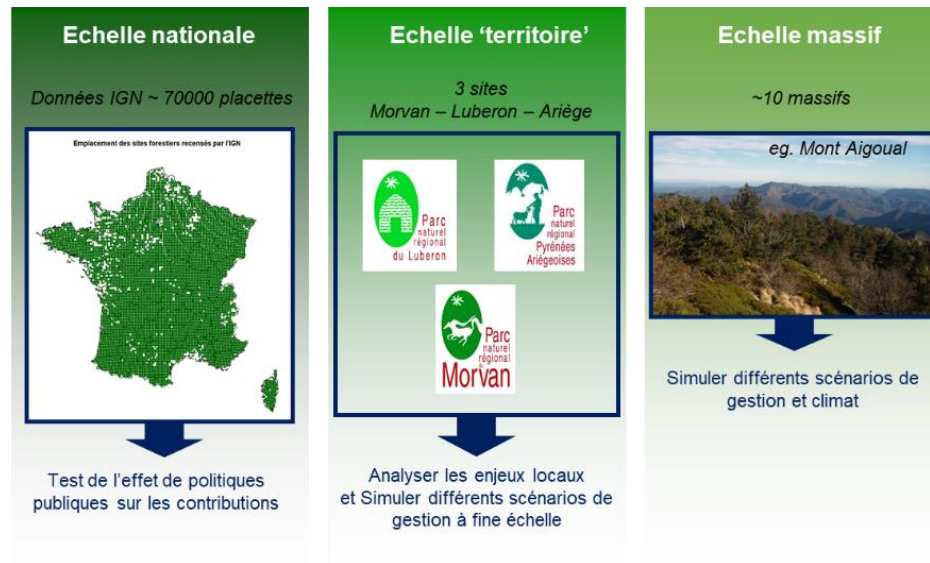


FISSA : inter- and transdisciplinary approaches of forests in transition

Objective: Estimating the impact of contrasting management scenarios on overall forest contributions in a context of climate change

Research questions:

- Management strategy for resilience to climate change?
- Trade-offs between forests contributions?
- Land-sharing vs. Land-sparing?



FISSA : inter- and transdisciplinary approaches of forests in transition

Methodological approach:

- An integrated modelling approach based on processes (including soil)

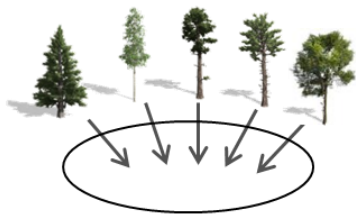
Scénarios climatiques

Scénarios de gestion

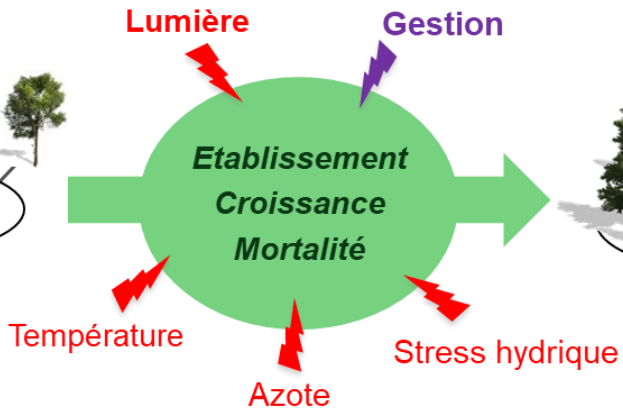
Choix d'essences
Types de peuplements (mélange, structure...)
Durée des rotations

Echelle placette => massif

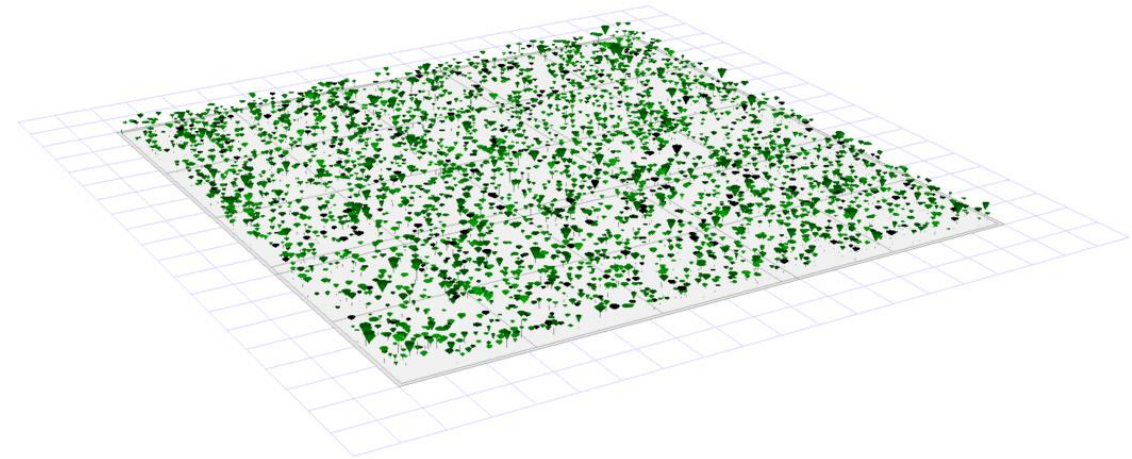
Pool d'espèces



Conditions du site



Composition
Structure
Biomasse
Productivité



FISSA : inter- and transdisciplinary approaches of forests in transition

Methodological approach:

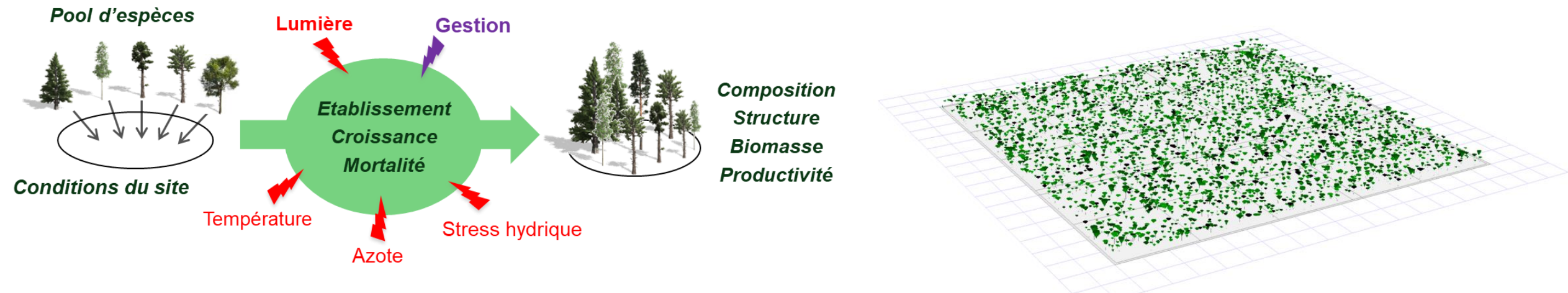
- An integrated modelling approach based on processes (including soil)

Scénarios climatiques

Scénarios de gestion

Choix d'essences
Types de peuplements (mélange, structure...)
Durée des rotations

Echelle placette => massif



- **Interdisciplinarity:** a WP in social sciences >> actors expectations
Social surveys + focus groups + workshop (local and national levels)
- **Transdisciplinary:** involvement of stakeholders along the research process

1. Promoting collaboration: the use of boundary spaces/objects

1. Promoting collaboration: the use of boundary spaces/objects

- **Conceptually** : social-ecological systems, models, scenarios

Berkes et al., 2003



1. Promoting collaboration: the use of boundary spaces/objects

- **Conceptually** : social-ecological systems, models, scenarios

Berkes et al., 2003

- **Methodologically**: companion modelling

Etienne et al., 2010



1. Promoting collaboration: the use of boundary spaces/objects

- **Conceptually** : social-ecological systems, models, scenarios

Berkes et al., 2003

- **Methodologically**: companion modelling

Etienne et al., 2010

- **Practically**: common field work, mediation, negotiation... trust!

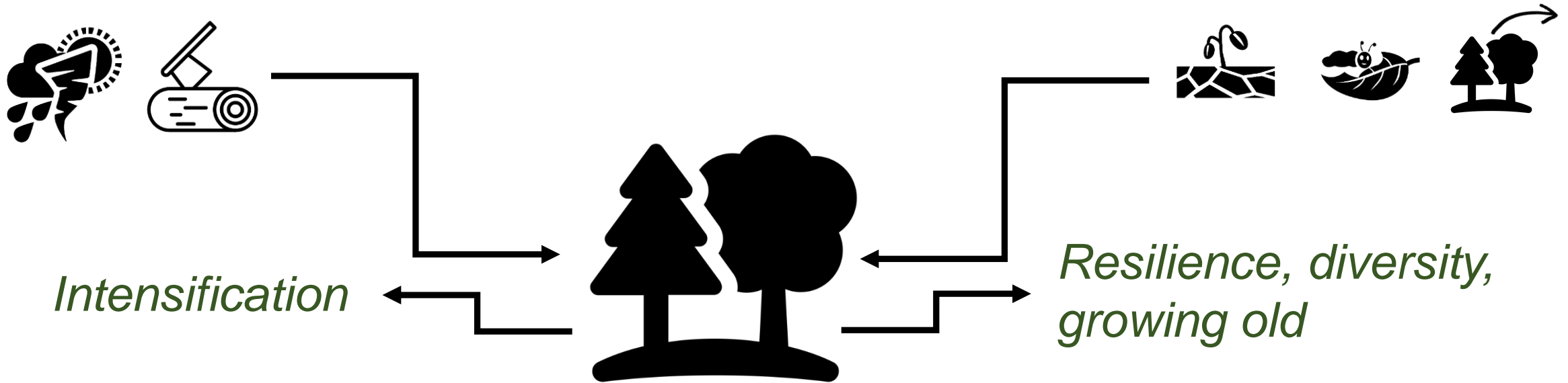
Arpin et al., 2019
Harris & Lyon, 2013



2. What collaboration does to research?

2. What collaboration does to research?

A paradox: French forests as mitigation tools, but facing vulnerabilities and adaptation challenges

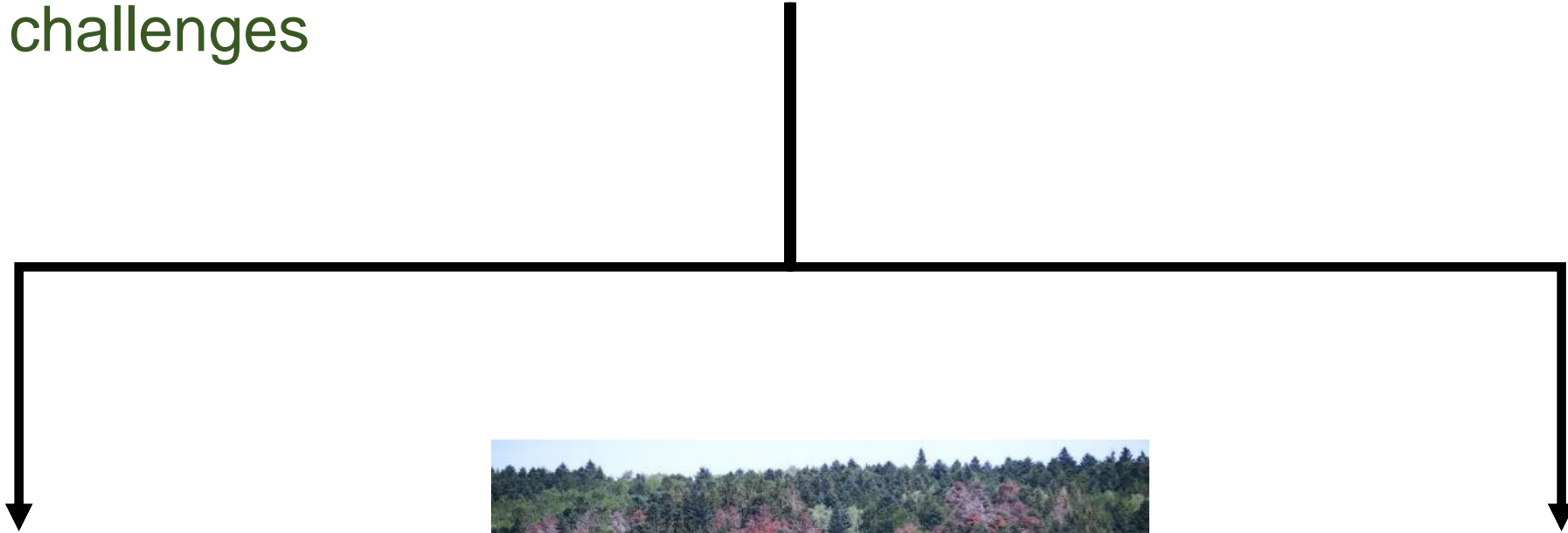


Expectations towards modelling :

- Bring scientific arguments into a controversia;
- Publish scientific papers;

2. What collaboration does to research?

A paradox: French forests as mitigation tools, but facing vulnerabilities and adaptation challenges



2021

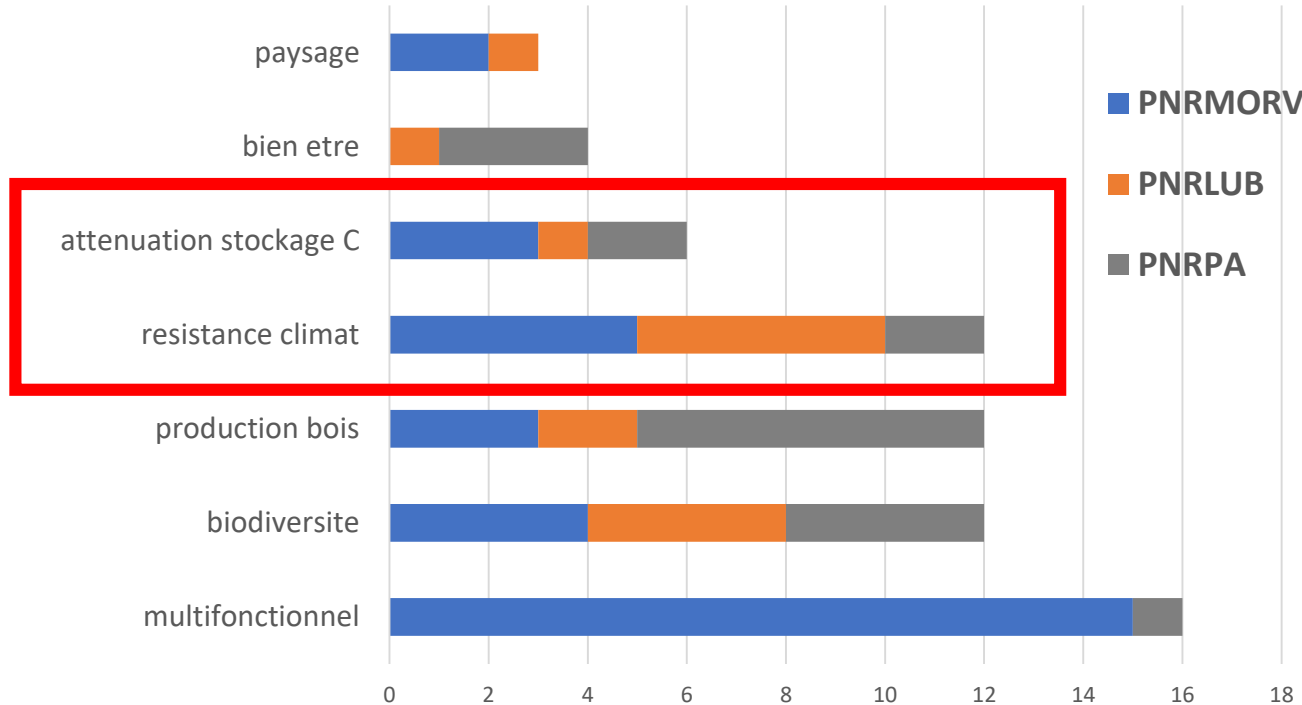


2024

2. What collaboration does to research?

- **Diverse expectations towards modelling (local level)**
 - Make choices in a crisis situation (Morvan);
 - Anticipate a shift towards more desirable practices
- > **Irrelevance of carbone storage focus?**

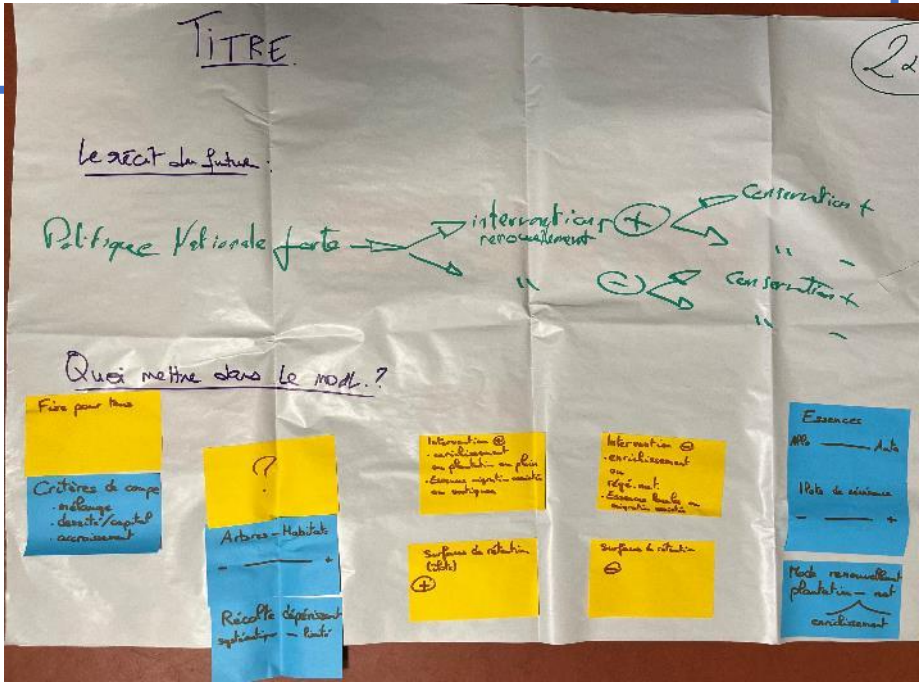
Qu'attendez-vous de vos forêts dans le futur?



2. What collaboration does to research?

- A response >> adaptation of the national workshop objectives = participatory design of scenarios to be tested.

National level: feed national debates, test national policy orientations, confront different visions of forests in the face of climate change.

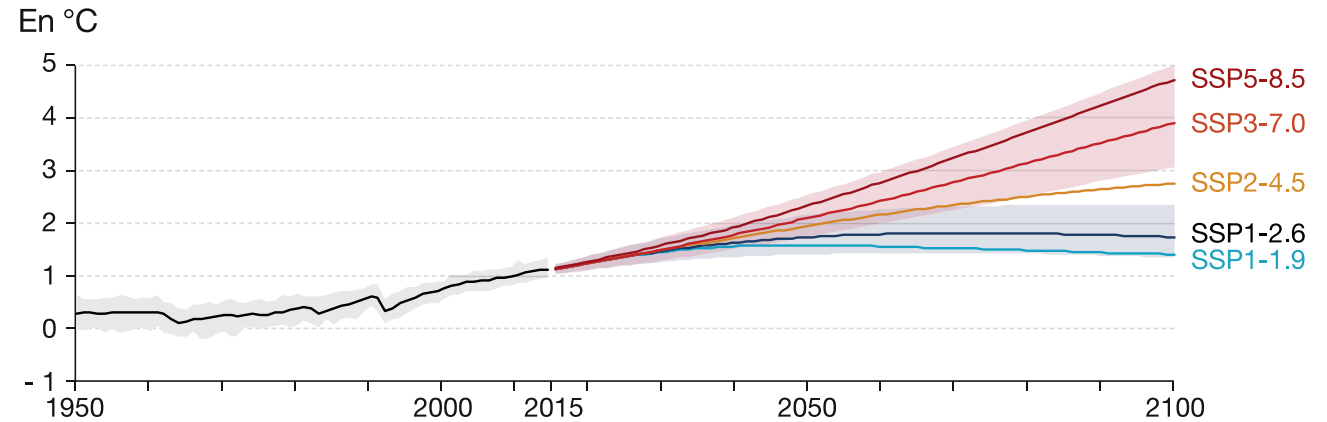


Local level: test / support silvicultural itineraries in a context of adaptation to climate change.



2. What collaboration does to research?

- **Diverse expectations towards modelling (national workshop)**
 - Publish a scientific paper (scientists);
 - Bring arguments for a national advocacy (environmental NGOs);
 - Explore management options (managers)



Conclusion

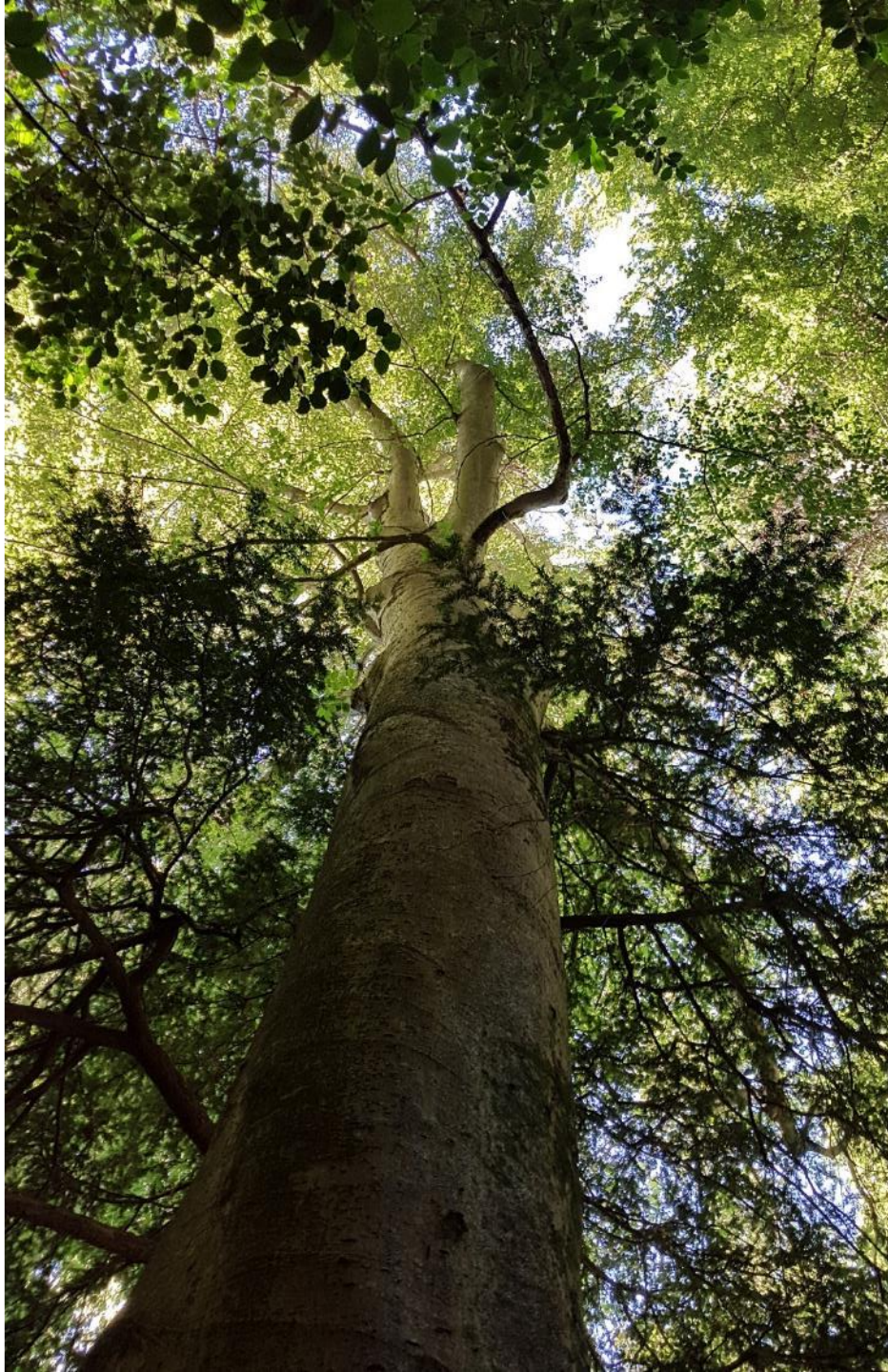
On the interests of participatory social-ecological modelling as an inter- and transdisciplinary practice to accompany forests in transitions

- Promote a transversal understanding of forests in transitions
- Exploring collectively uncertainties through an inclusive process
- A science rooted in societal needs

...And on it's limits

- Costly in time, still questionned scientifically, requires flexibility
- Can create incomforts
- Tensions or absences revealing power issues and diverging interests





AgroParisTech



INRAE



Institut de Recherche
pour le Développement
FRANCE

anr[®]

PRC 2021-2026



CENTRE D'ÉCOLOGIE
FONCTIONNELLE
& ÉVOLUTIVE

UMR
Silva



Biogéochimie des Ecosystèmes Forestiers



sens
savoirs environnement sociétés

URFM



CNPFP
INSTITUT POUR LE
DÉVELOPPEMENT
FORESTIER



Réserves
Naturelles
DE FRANCE



forêt méditerranéenne



Office National des Forêts



Parc
naturel
régional
Pyrénées
Ariégeoises



Parc
naturel
régional
du
Morvan



Parc
naturel
régional
du Luberon

Time for questions!

clara.therville@ird.fr



Colloque Forêts en transitions
Concepts, méthodes, mesures et perspectives

Forests in transitions
Concepts, methods, assessments
and prospective

Tours, 18-19 juin 2024

