

INTERACTIONS BETWEEN FARMERS' PERCEPTION OF AGRI-ENVIRONMENTAL PERFORMANCES AND MULTI-CRITERIA EVALUATION BASED ON STICS MODEL SIMULATIONS IN SOUTHWESTERN FRANCE



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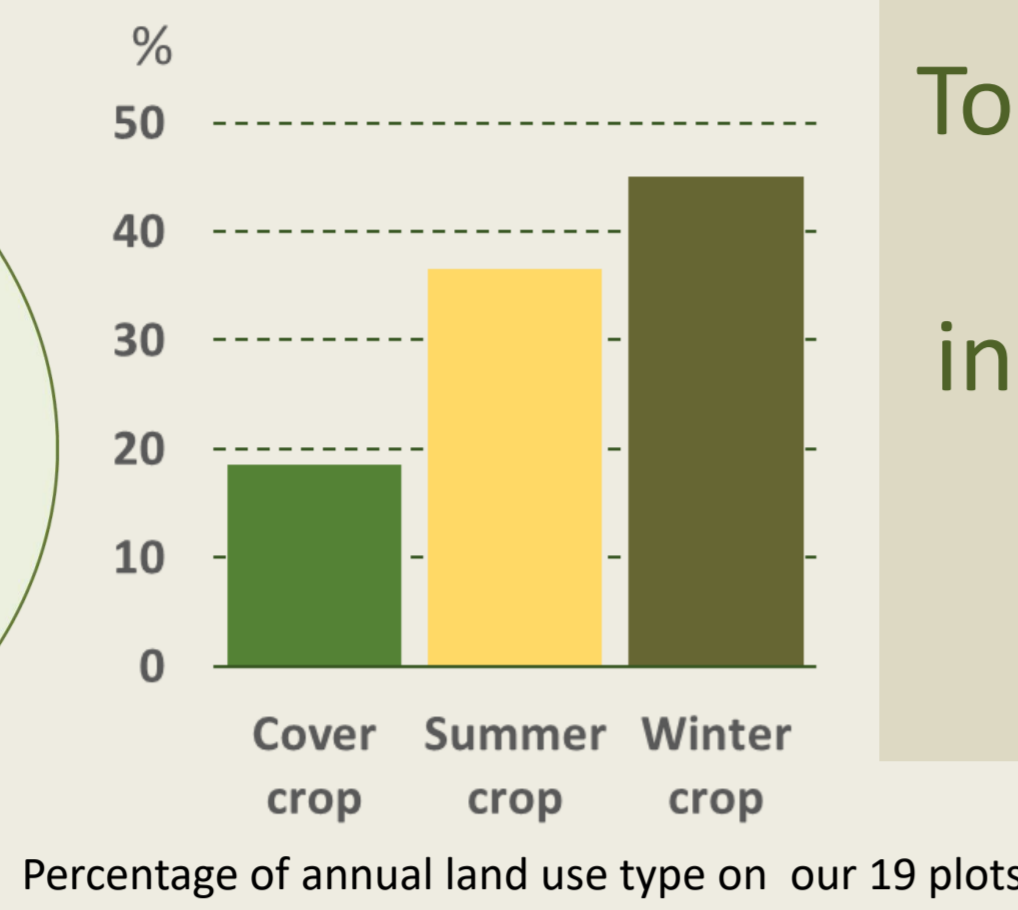
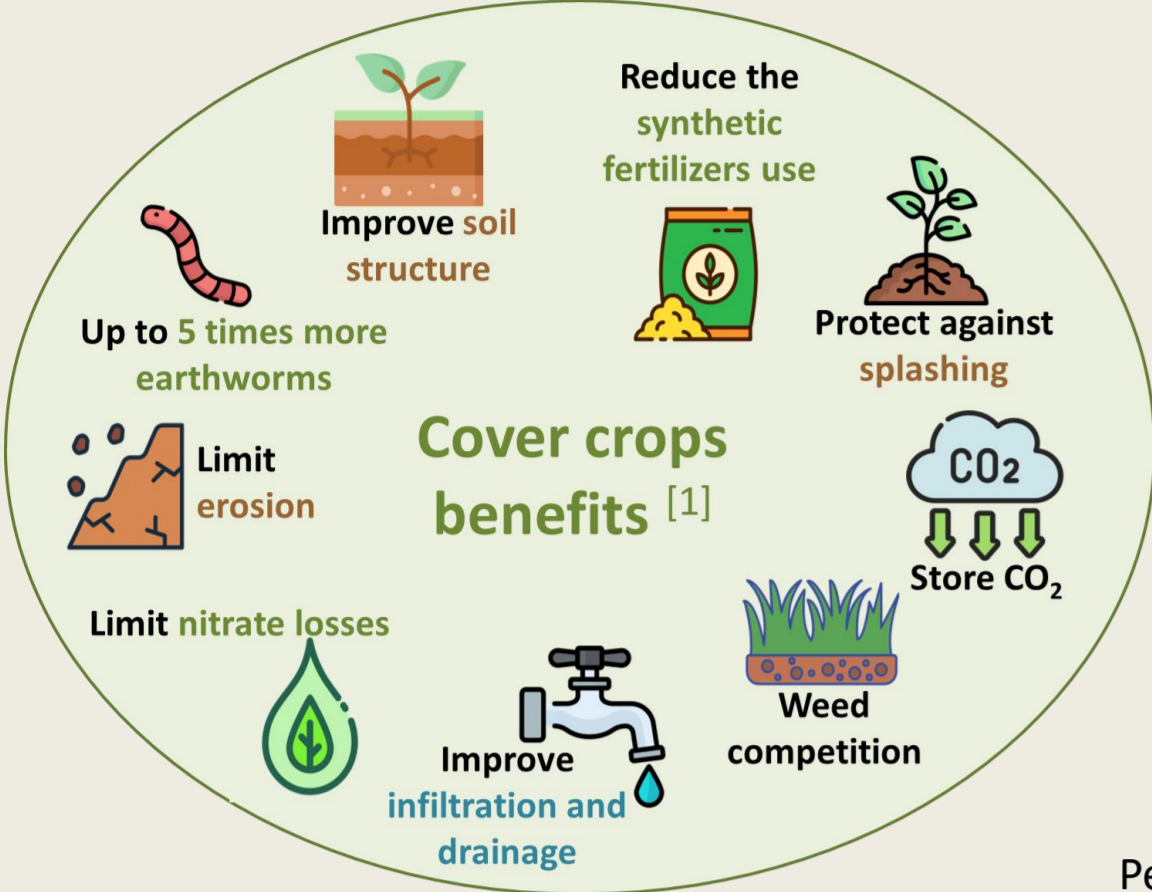
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Context:

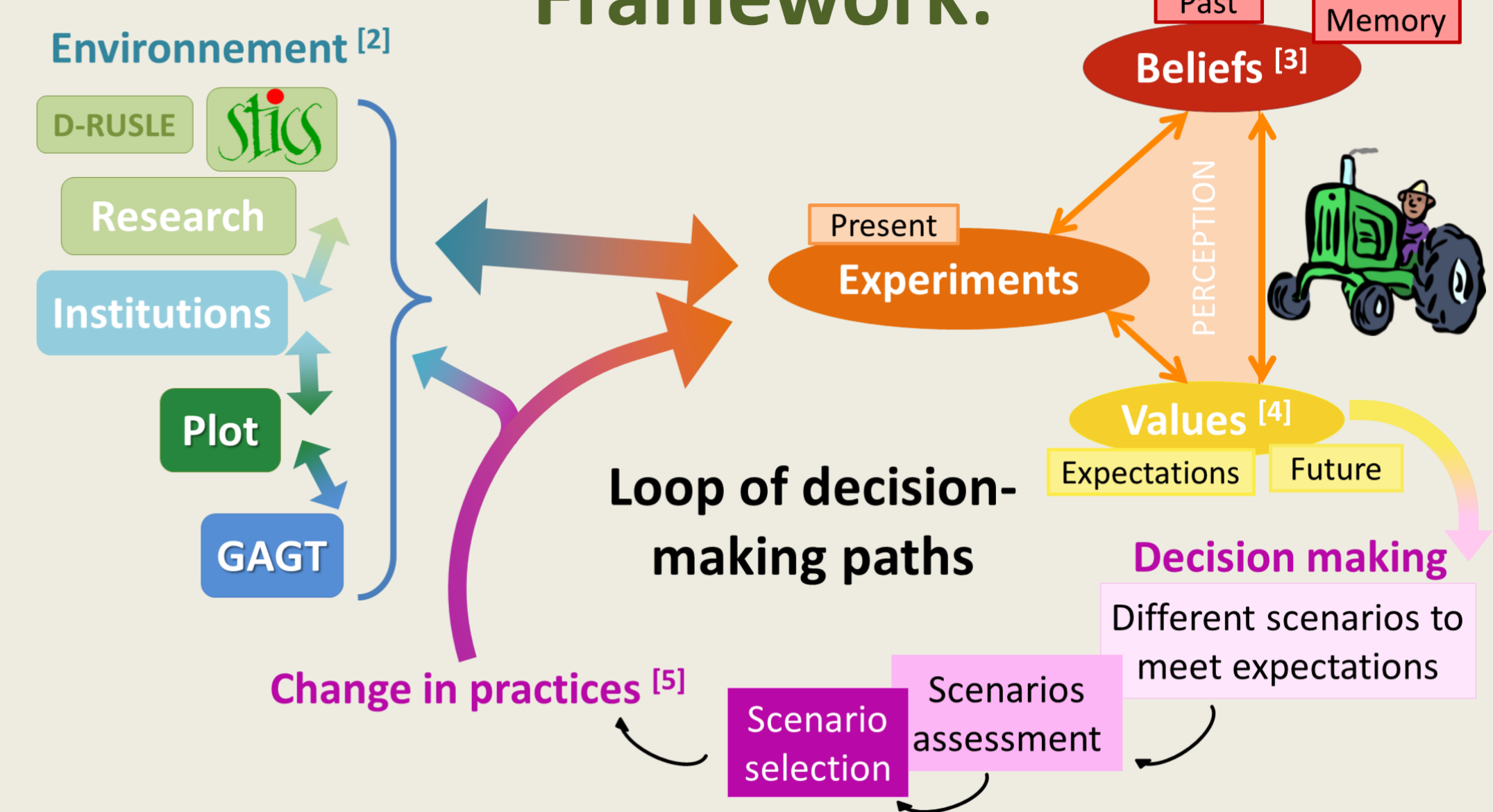
Despite identified benefits, cover crops are not systematically adopted by farmers.



Question:

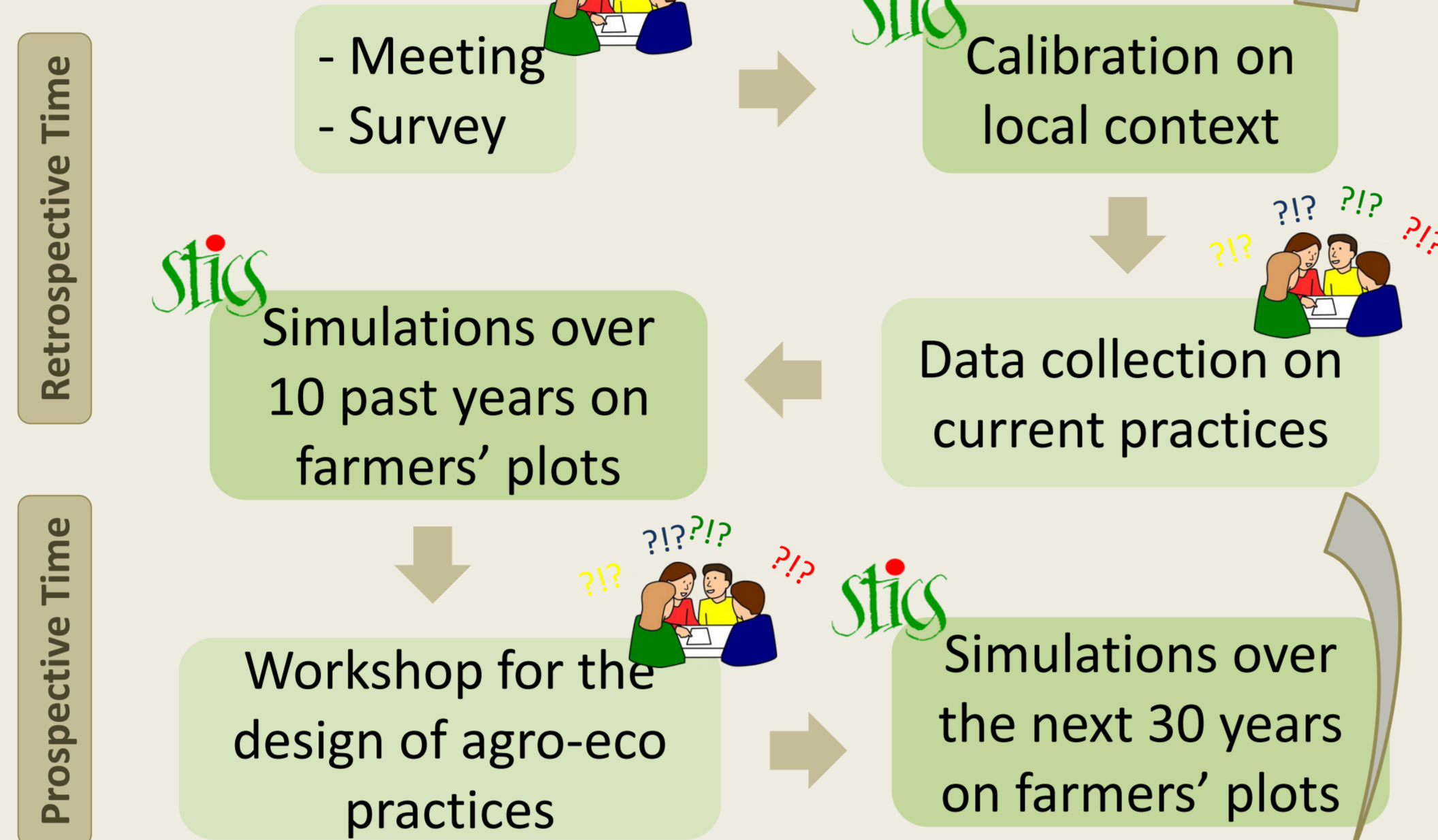
To what extent does crop experimentation through modeling, including farmers, induce a change in belief systems likely to trigger the long-term adoption of agroecological practices?

Framework:

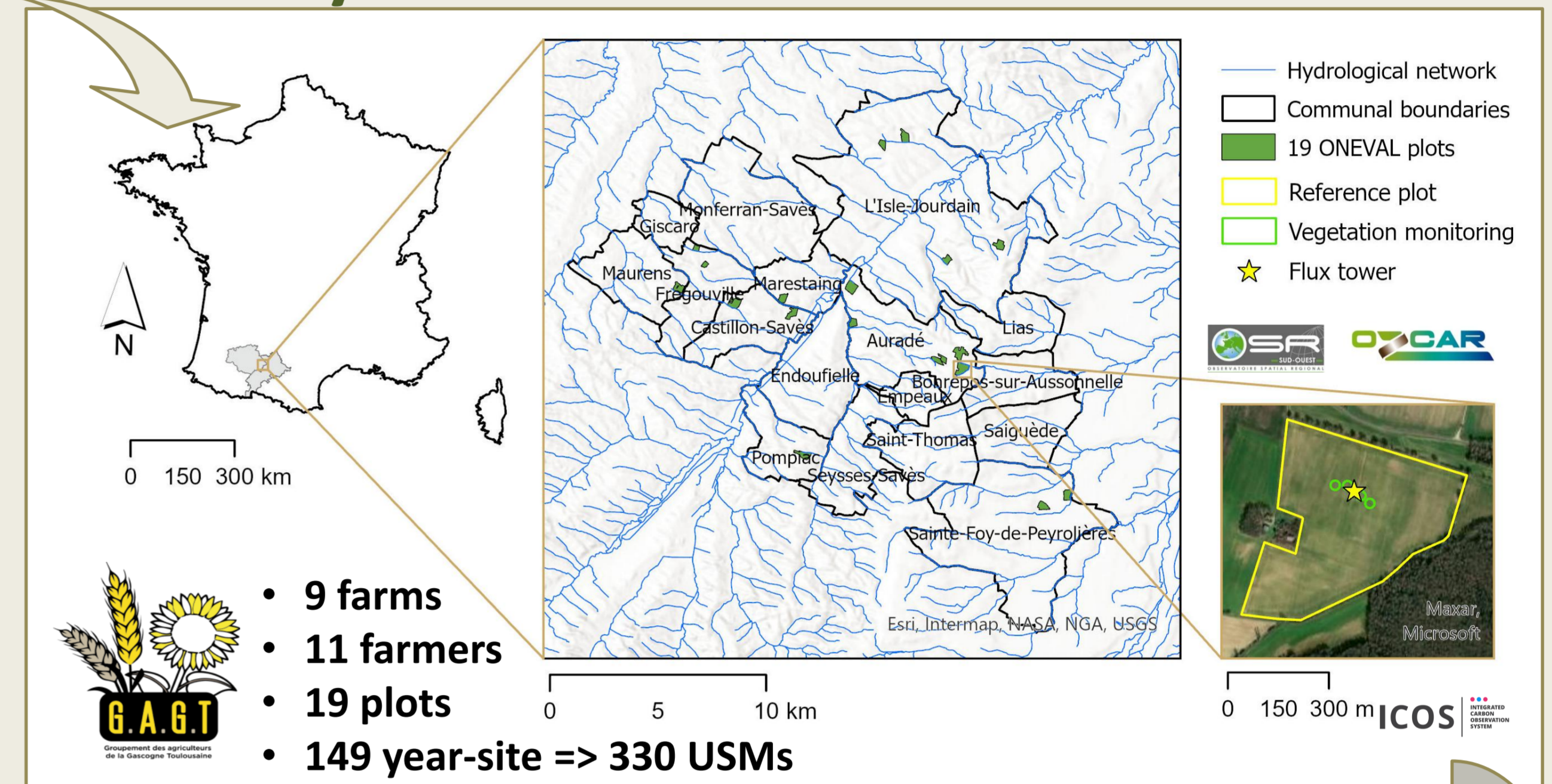


Methods:

Tested hypothesis:
The interaction between modelling research results and farmers' belief systems, viewed through the lens of multi-criteria assessments, can lead to a change in perceptions of practices [5].



Study area:



Beliefs characterization results:

Cover crops perceived Costs
Stress, expenses, weeds, negative impact on cash crops

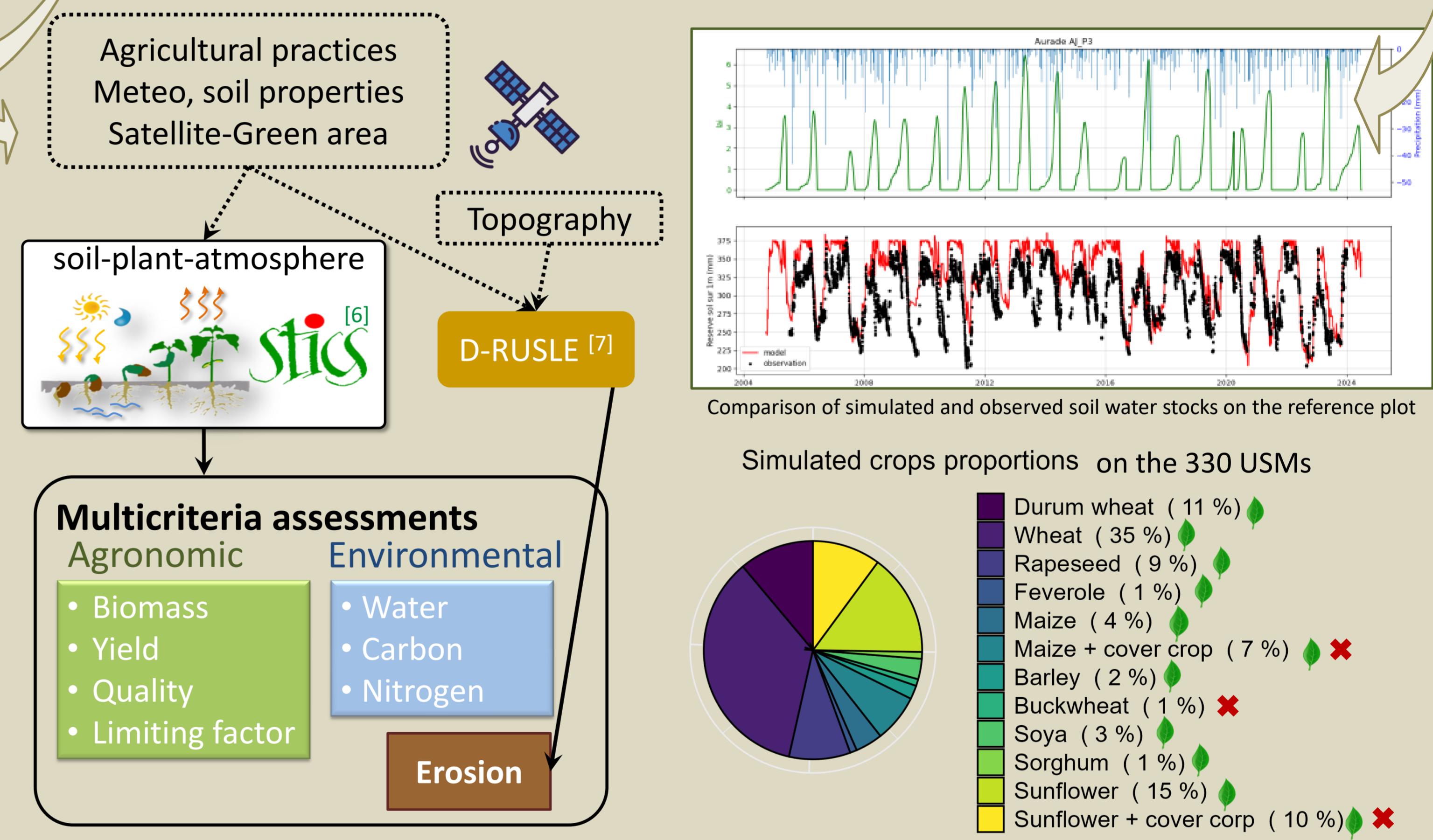
Cover crops perceived Benefits
Improved soil fertility, soil structure, limits erosion, limits weeds, favors biodiversity

Impact of institutions on the perception of cover crops for three groups of farmers who often (Convinced), rarely (Hesitant) or never (Organic) plant cover crops

Groups Institutions	Cover crops perceived Costs			Cover crops perceived Benefits		
	Convinced	Hesitant	Organic	Convinced	Hesitant	Organic
Market	+	+	+	-	-	-
Policies	+	+	+	-	-	-
Territory	-	0	+	+	0	0
Family	-/+	0	0	-/+	-/0	0
Soil	-	+	+	+	+/0	-
Biotop	-	+	+	+	-	-
Mean farm area	116 ha	210 ha	209 ha	116 ha	210 ha	209 ha

Adoption of cover crops depends on balanced motivations and barriers.
The farm area contributes to the balance between motivations (territory, biotope) and obstacles (policies, market).

Modelling tools:



Use of simulation results as a mediating artifact during the workshop:

Carbon stock is maintained only by crop residues and cover crops

Water erosion due to increased drainage area is limited by cover crops even if they are sparse.

Summer cover crops instead of bare soil could help to prevent nitrogen output in the form of N2O and NO3.

- ✓ Strong deliberation between farmers and with scientists during the sharing of simulation results
 - ✓ reconsideration of residue types (ex rapeseed vs wheat)
- ✓ Board game to redesign, among peers, the agricultural practices of the near future
 - ✓ addition of cover crops, particularly in summer
- ✓ "We need you" vs barriers to the sector

Acknowledgment:

This work benefits from the financial support of the défi-clé OCTAAVE and the Living Lab OccitaNum. Many thanks to GAGT farmers who agreed to share this work with us.



Références:

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