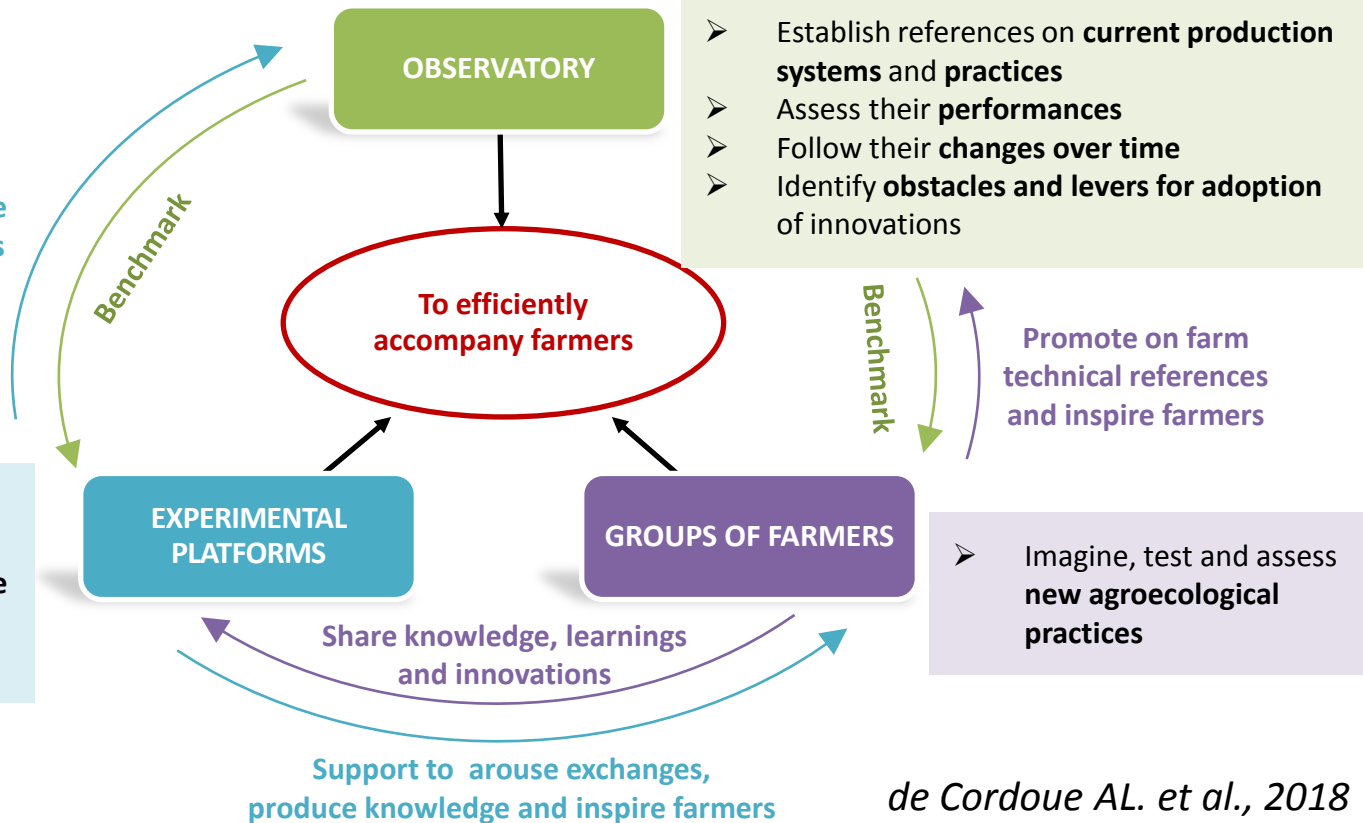


Syppre: better reconciliation of global and local issues through innovative and diversified cropping systems

Tauvel P., de Cordoue AL., Cadoux S., Duval R.,
Toqué C., Tailleur A.

Support to arouse exchanges, produce knowledge and inspire farmers

- Test, fine tune and assess an **innovative cropping system**, compared to a **reference one**
- Carry out **factorial trials** to close gaps of knowledge



de Cordoue AL. et al., 2018

This presentation aims to:

- i. briefly describe the five experimental platforms
- ii. share their performance indicators
- iii. discuss strengths and weaknesses of these strategies

Deep loamy soils of Picardie (PIC)



Deep chalky soils of Champagne (CHAM)



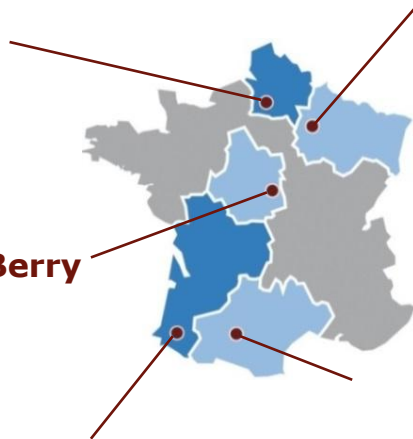
Shallow clay-limestone soils of Berry (BER)



Deep clay humic soils of Béarn (BEA)



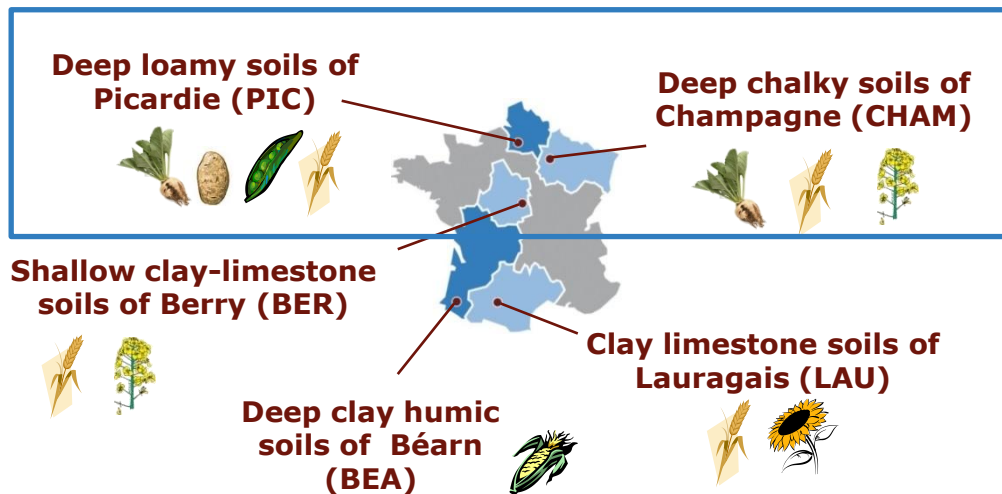
Clay limestone soils of Lauragais (LAU)



Co-designing systems to meet global challenges...

	Indicators	Objective
Productivity	Gross Product (€/ha)	≥ / control system
	Energy Efficiency	≥ / control system
Profitability	Direct Margin (€/ha)	≥ / control system
Environmental and technical indicators	Mineral Nitrogen Quantity (kg/ha)	-20% / control system
	Treatment Frequency Index (en% TFIref)	-50% / regional reference value
	Total Greenhouse Gases Emissions (kgéqCO2/ha)	-20% / control system

... and local challenges

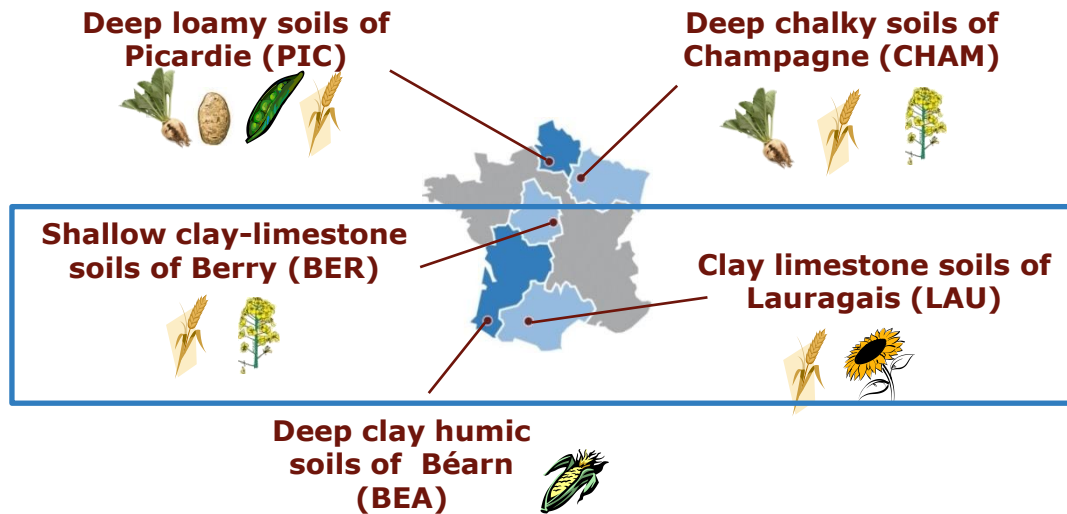


Soil fertility:

- Improving N mineralization
- Improving soil structural stability

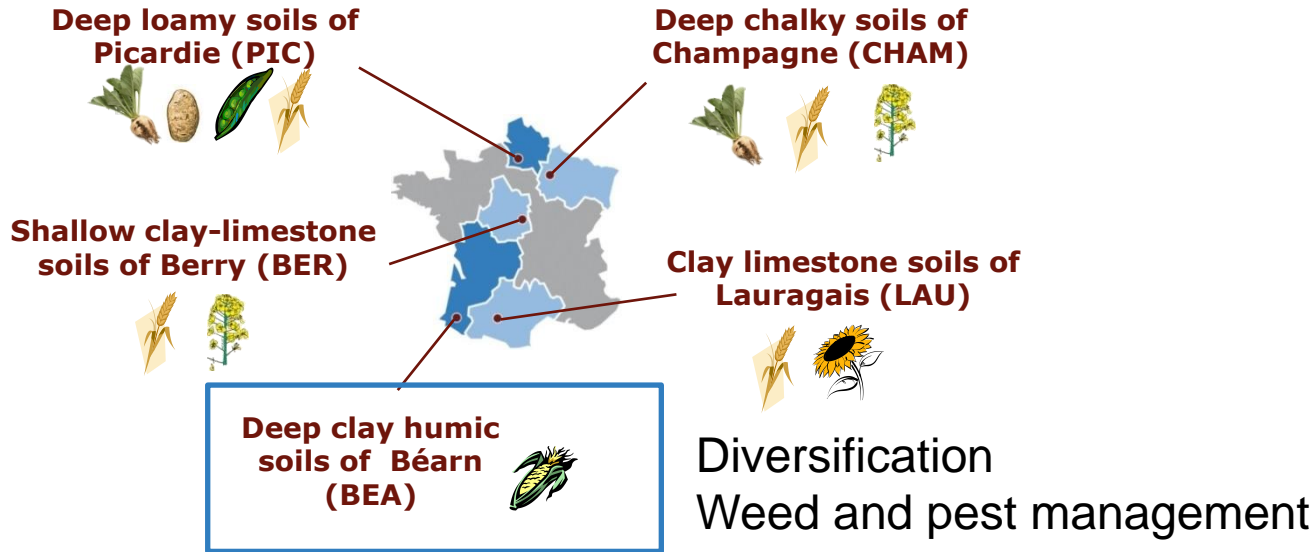


... and local challenges



Weed management
Soil fertility

... and local challenges



Deep loamy soils of Picardie (PIC)



Deep chalky soils of Champagne (CHAM)



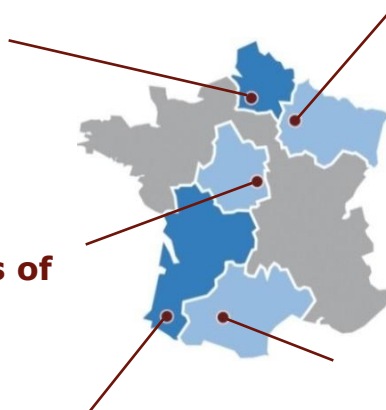
Shallow clay-limestone soils of Berry (BER)

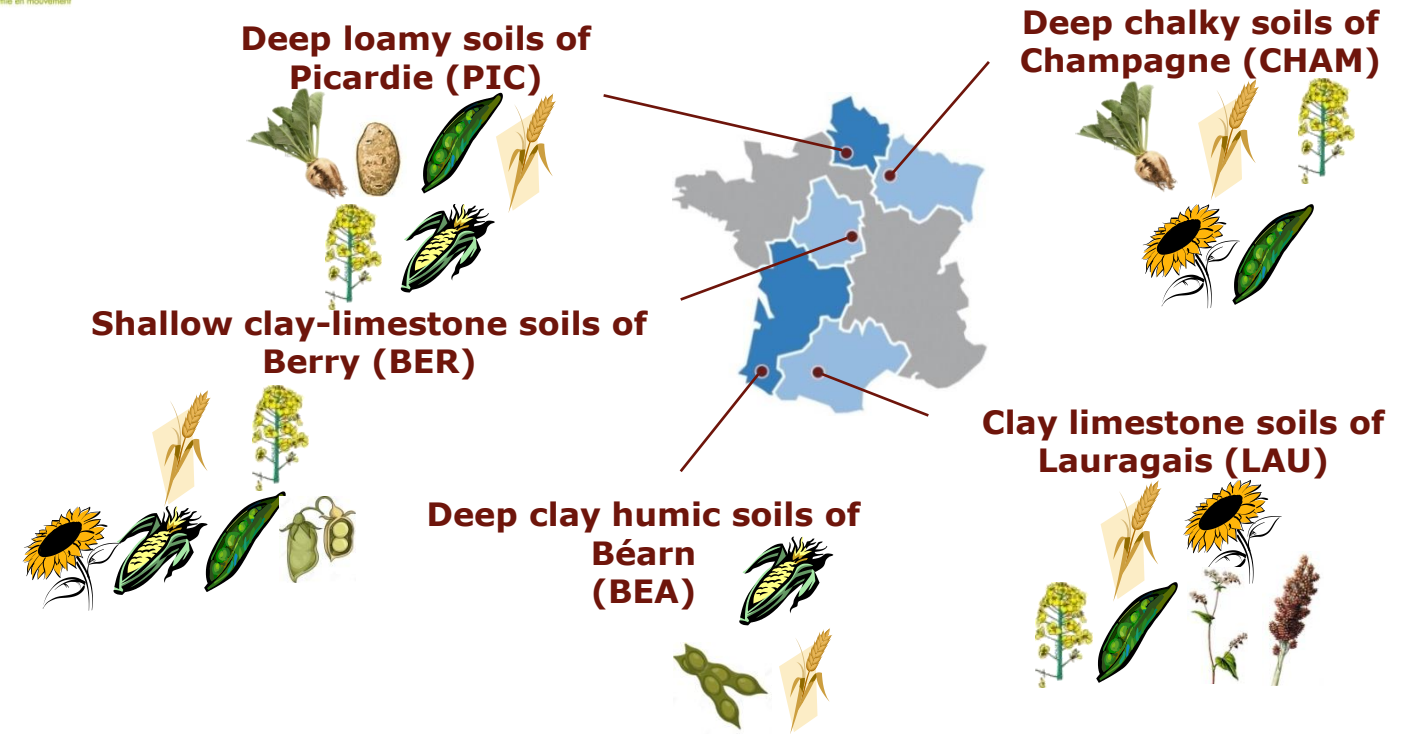


Deep clay humic soils of Béarn (BEA)



Clay limestone soils of Lauragais (LAU)





PIC	CHAM	BER	LAU	BEA
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Productivity	Gross Product (€/ha)	-29%	-9%	-7%	-14%	+1%
	Energy Efficiency	-3%	+9%	+5%	-7%	+9%

Profitability	Direct Margin (€/ha)	-37%	-15%	+4%	-28%	0%
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Environmental and technical indicators	Mineral Nitrogen Quantity (kg/ha)	-26%	-26%	-35%	-8%	-63%
	Treatment Frequency Index (en% TFlref)	-62%	-5%	-39%	+34%	-6%
	Total Greenhouse Gases Emissions (kgéqCO2/ha)	-17%	-20%	-28%	-7%	-33%

Benefits/Drawbacks of crop diversification

- Crop diversification has been a good lever to overcome some technical barriers:
 - Weeds management in BER



© Gilles Sauzet, Syppe

Syppre Benefits/Drawbacks of crop diversification

- Crop diversification has been a good lever to overcome some technical barriers:
 - Weeds management in BER
 - Erosion issues in LAU



Control system



Innovative system

© Jean-Luc Verdier, Syppre

Syppre Benefits/Drawbacks of crop diversification

- Crop diversification is a good lever to meet challenges related to the use of mineral N and greenhouse gases emissions
- Crop diversification does not necessarily lead to a decrease in the use of pesticides
- Crop diversification schemes must take account to profitability

Discussion

- These trials must be evaluated on a long-term time scale
- All platforms have difficulties to combine different objectives

Thank you for your attention!