

# Interdisciplinary research

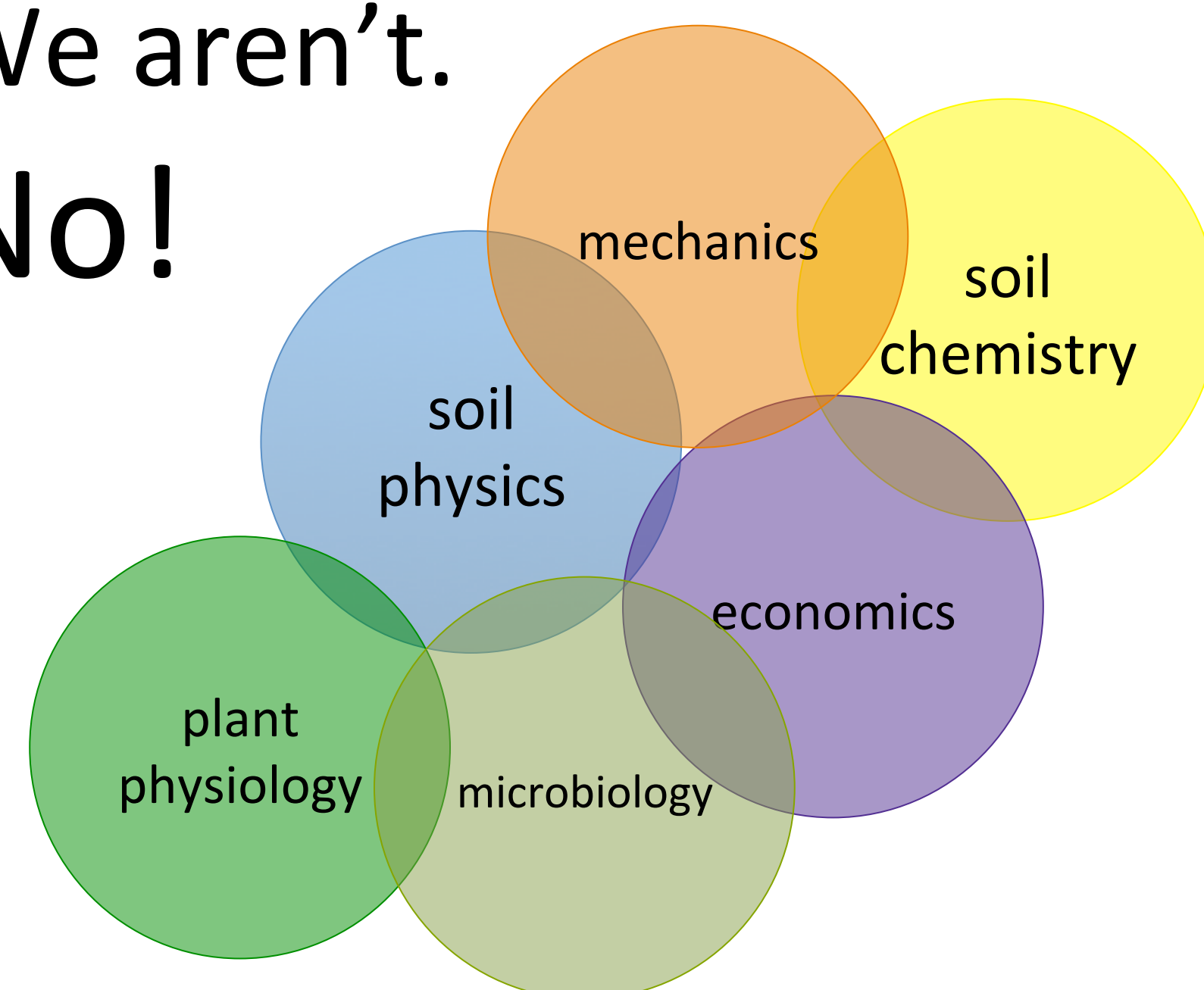
## a conditio sine qua non for sustainable agricultural soil management?

S. Garré\*, S. Artru, F. Boeraeve, D. Brédart, S. Hatt, M.-P. Hiel

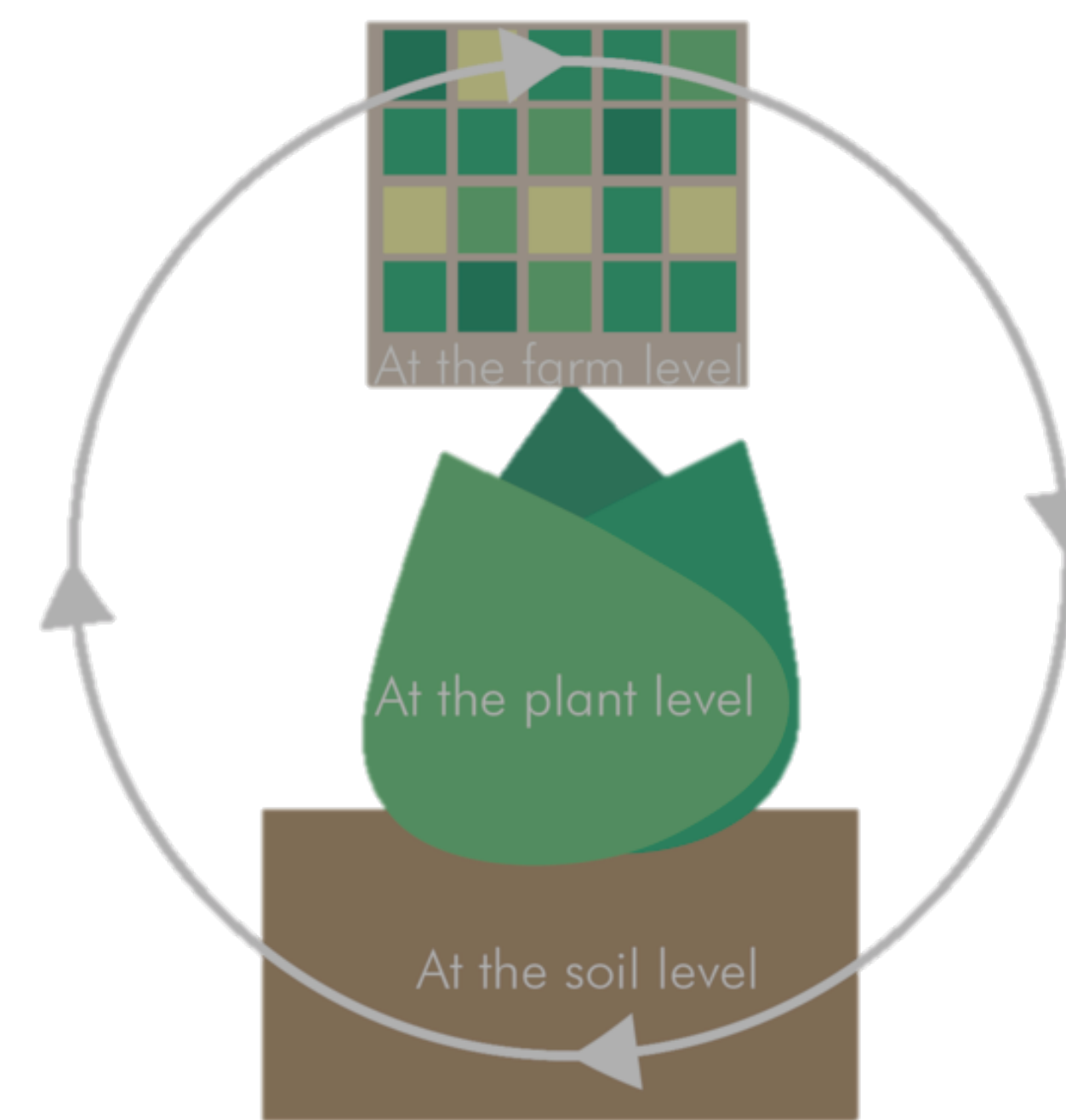
AgricultureIsLife.be, Université de Liège, Gembloux Agro-Bio Tech, Passage des déportés 2, 5030 Gembloux (\*sarah.garre@ulg.ac.be)

## Aren't we needlessly complicating our lives?

We aren't.  
No!



Sustainable soil management =  
at the fringe of multiple  
disciplines



Soil management has  
impacts from micrometer to  
regional scales



Agriculture =  
a system based on  
human interactions

To reveal multiscale & multidisciplinary processes → cross approaches, not simply juxtapose them

## A new approach for science!

Experiences from the AgricultureIsLife research platform

### Facilitators

#### Physical proximity

Being near to the persons working with you facilitates spontaneous consultation and working together.

#### Action-oriented approach

Contacts with actors from the outset of the project is essential to create research relevant in to local actors and to local conditions as well as to increase creativity (by cross-pollination).

#### PhD = individual + team work

The work load and structure of a PhD project should provide time, funding and co-workers to tackle interdisciplinary questions.

### Levers

#### Give us time!

Agreeing on common priorities, crossing methodologies, compare and conclude together takes time. Multidisciplinary topics are scrapped first under time pressure, since they are more time-consuming.

#### Human interactions

\* *force >< choose* \* *mutual understanding*

Real team work is clearly facilitated when people are auto-motivated and when human contacts are smooth. Top-down decisions and clashing personalities make the multidisciplinary process even more difficult.

#### Learn and pass on

Interdisciplinary research has a steep and long learning curve. In order to become successful, methodological lessons learned in early projects, should be passed on to the next. Communication is essential.

### Current limits

#### Publishing environment

Interdisciplinary research, being time-consuming and leading to multiple author articles is not sympathetic to performance benchmarks of fast accumulation of publications as first single author. Adapting journal and jury rules in order to be successful with interdisciplinary topics in the current scientific professional climate seems necessary.

#### Convergence during project definition

Projects don't become interdisciplinary only by putting together researchers from different domains on a joint topic. Time must be invested to agree across disciplines on the project priorities and the methodologies to engage without hidden individual agendas.

### Successes

#### Crossing methods to adapt

PhD student adapted their experimental work in order to respond to questions/doubts formulated by people from other domains.

#### Joint paper writing

A special issue under construction led to some spontaneous joint initiatives resulting some cross-disciplinary papers.

#### Efficient knowledge and competence exchange

The possibility to get counsel or specific help from fellow researchers in other research domains allowed inter-disciplinarity where it would otherwise be unimaginable.

#### Data base

A data base with long term information of all measurements on a joint research experiment has been established ... now we need to find out how to really valorize it!