



HAL
open science

Current dominant crop sequences across EU : A typology based on LUCAS dataset

Rémy Ballot, Nicolas Guilpart, Elise Pelzer, Marie-Hélène Jeuffroy

► **To cite this version:**

Rémy Ballot, Nicolas Guilpart, Elise Pelzer, Marie-Hélène Jeuffroy. Current dominant crop sequences across EU : A typology based on LUCAS dataset. European Conference on Crop Diversification, Sep 2019, Budapest, Hungary. hal-04429375

HAL Id: hal-04429375

<https://hal.inrae.fr/hal-04429375>

Submitted on 31 Jan 2024

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Current dominant crop sequences across EU: A typology based on LUCAS dataset

Rémy Ballot*, Nicolas Guilpart, Elise Pelzer, Marie-Hélène Jeuffroy
UMR Agronomie INRA-AgroParisTech-Université Paris-Saclay, F-78850 Thiverval-Grignon



LEGVALUE



A need to describe current cropping systems, as a baseline to assess benefits of crop diversification, but...

...information limited to land use in datasets available at European scale

...local/national datasets are **not homogeneous** regarding information about **crop sequences** and management

Aim of the study → combining datasets to describe current crop sequences across EU





LEGVALUE

Material – 2 datasets

Land Use Cover Area statistical frame Survey



LUCAS	2008	2009	2010	2011	2012	2013	2014	2015
A grid of 45 000 points across EU	Land use	NA	NA	NA	Land use	NA	NA	Land use

“Pratiques culturelles” survey

7 crop sequence groups

Freq.

Freq.

Freq.

Freq.

Freq.

Freq.

Freq.

Freq.

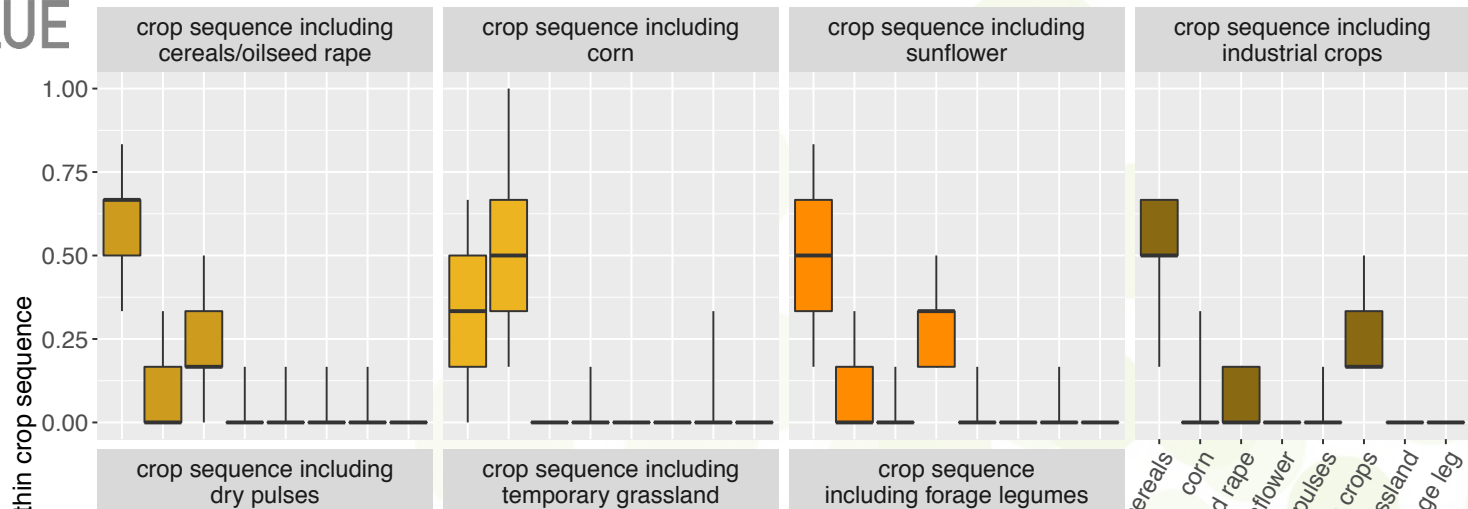


European Conference on Crop Diversification, September 18-21, 2019, Budapest, Hungary

7 crop sequence groups distinguished for France



LEGVALUE



7 crop sequences groups

Freq.

Freq.

Freq.

Freq.

Freq.

Freq.

Freq.

Freq.

LUCAS	2008	2009	2010	2011	2012	2013	2014	2015	CSgroup
A grid of 45 000 points across EU	Land use	NA	NA	NA	Land use	NA	NA	Land use	

Decision rules validated for France



European Conference on Crop Diversification, September 18-21, 2019, Budapest, Hungary

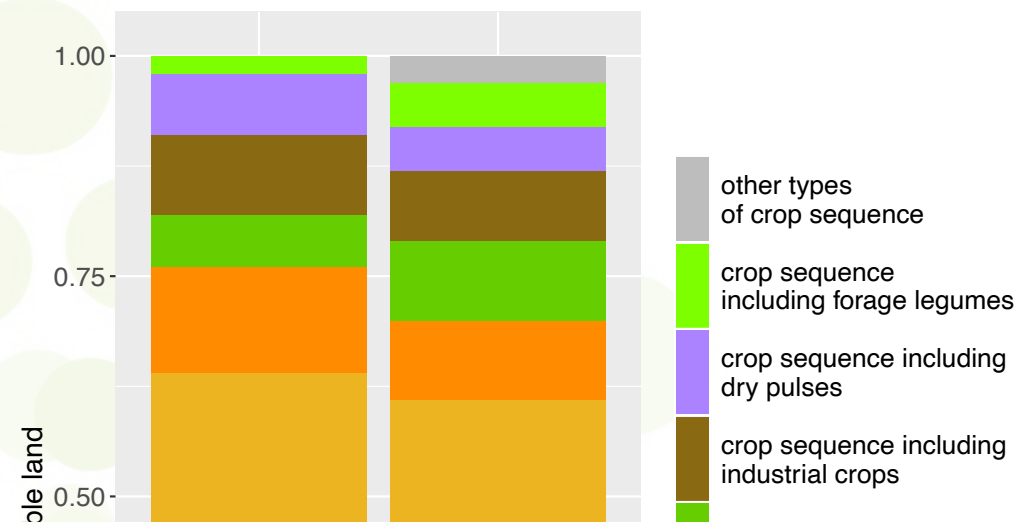


LEGVALUE

Consistent distributions obtained with both datasets for France

Decision rules to assign each LUCAS points to one crop sequence group

IF temp. grassland freq. > 0, crop seq. incl. temp. grassland,
 ELSE, IF forage legumes freq. > 0, crop seq. incl. forage legumes,
 ELSE IF dry pulses freq. > 0, crop seq. incl. dry pulses.



7 crop sequences groups

Freq.

Freq.

Freq.

Freq.

Freq.

Freq.

Freq.

Freq.

LUCAS	2008	2009	2010	2011	2012	2013	2014	2015	CSgroup
A grid of 45 000 points across EU	Land use	NA	NA	NA	Land use	NA	NA	Land use	

Decision rules validated for France



European Conference on Crop Diversification, September 18-21, 2019, Budapest, Hungary



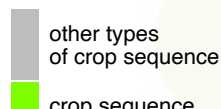
LEGVALUE

At EU scale...

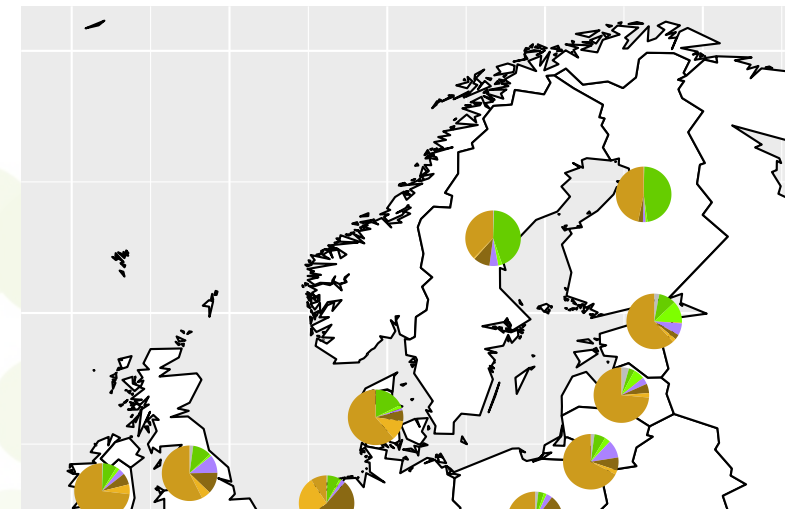
è Crop sequences based on cereals, oilseed rape and corn dominate arable land

è Local specificities highlighted

(e.g. crop seq. with beet/potatoe in BE/NL, with sunflower in HU/SK, with grassland in FI/SE)

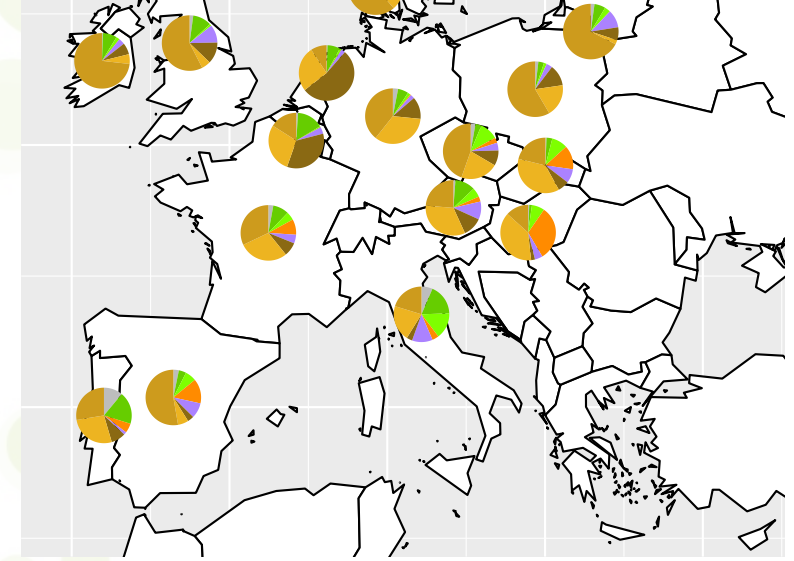
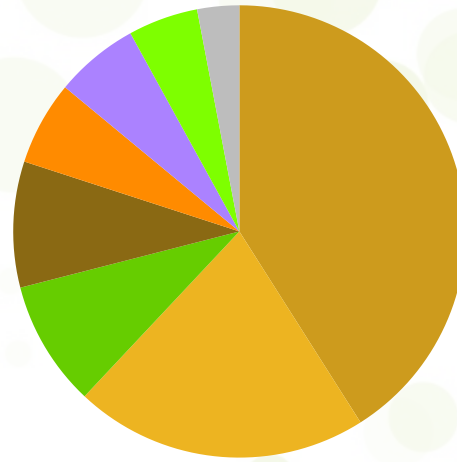

 other types of crop sequence
 crop sequence

EU





- other types of crop sequence
- crop sequence including forage legumes
- crop sequence including dry pulses
- crop sequence including sunflower
- crop sequence including industrial crops
- crop sequence including temporary grassland
- crop sequence including corn
- crop sequence including cereals/oilseed rape



European Conference on Crop Diversification, September 18-21, 2019, Budapest, Hungary



LEGVALUE

Perspectives

- è Further developments in the method validation, requiring other crop sequences datasets, from other countries
- è Adding crop management information toward a description of current cropping systems

- e Adding crop management information toward a description of current cropping systems
- è A baseline to assess impacts of scenarios for scaling-out legume-based cropping systems



European Conference on Crop Diversification, September 18-21, 2019, Budapest, Hungary

**European Conference
on Crop Diversification**

September 18-21, 2019
Budapest, Hungary



Thank you for your attention

Thank you for your attention

Rémy Ballot*, Nicolas Guilpart, Eise Pelzer, Marie-Hélène Jeuffroy
UMRAgronomie INRA-AgroParisTech-Université Paris-Saclay, F-78850 Thiverval-Grignon
remy.ballot@inra.fr



LEGVALUE

The LegValue project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N°727672.

We also would like to thank the French Ministry of agriculture for carrying out the "Pratiques culturales" survey and authorizing access to the data.



