Developing sustainable permanent grassland systems and policies across Europe: SUPER-*G*

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ADAS

Content

- Background
  - Focus on livestock grazing systems dominated by permanent grassland (PG)
  - Improving management practices
- SUPER-*G* project
  - Overall aims & objectives
  - Multi-actor & transdisciplinary approach
  - Examples of decision support tools
  - Co-innovation & co-production of new tools & management approaches

Background

- Efficient management of PG – key to productivity & profitability
- Strong link between grass utilisation & profitability
- Dependent on policies & financial mechanisms
- Society dependent on the ecosystem services (ES) provided by PG
- How to retain PG and the rural communities that depend on them?

SUPER-*G* – overall aims & objectives

SUPER-*G* will apply a **multi-actor approach** to:

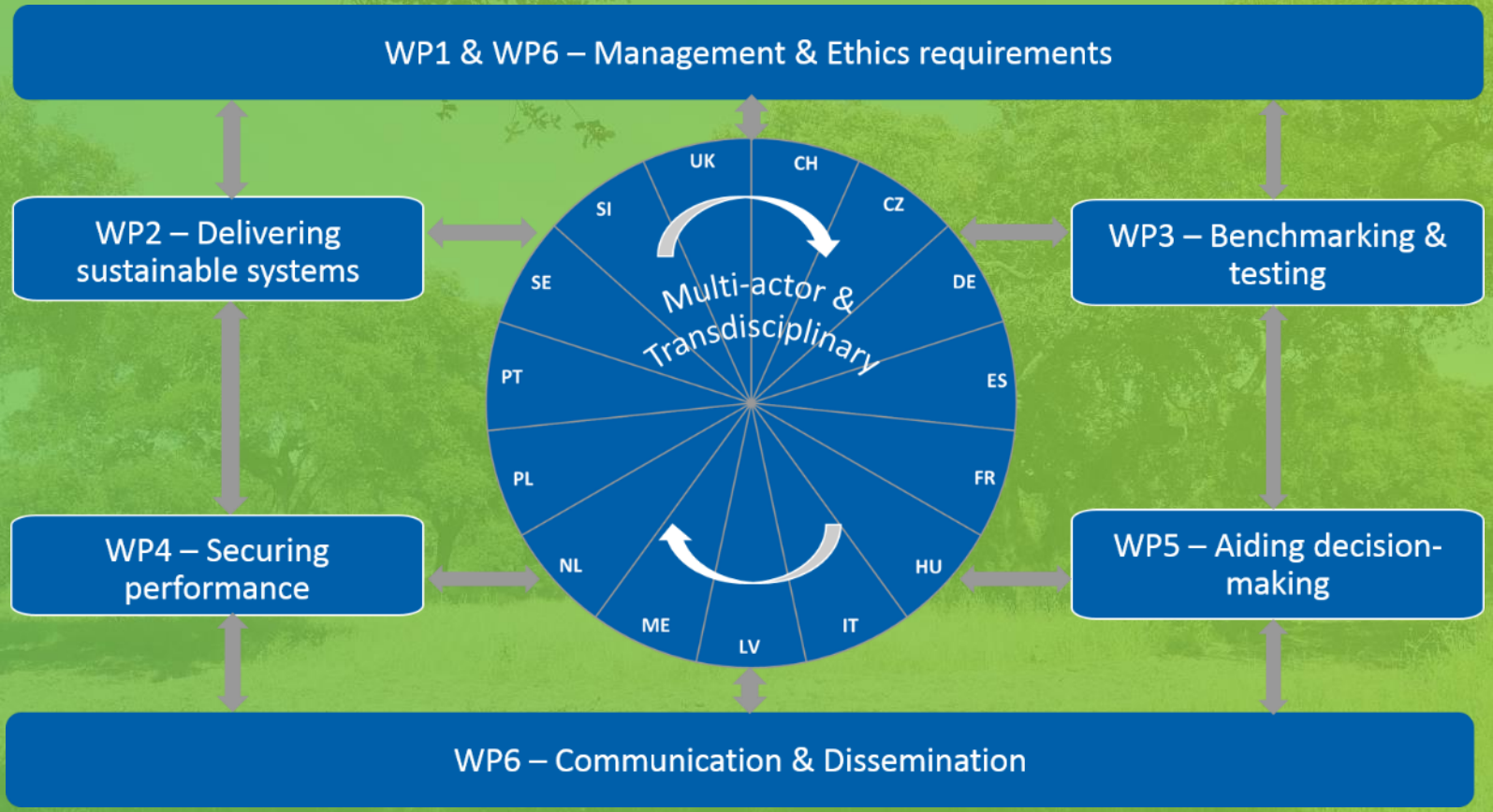
- **Better understand** the **importance and functioning of PG** within a range of European biogeographic regions and farming systems
- **Benchmark** PG performance across Europe
- **Co-develop integrated approaches** for profitable and sustainable PG management
- **Co-develop tools and policy mechanisms** to support the maintenance and sustainable management of PG

Permanent grassland (PG)

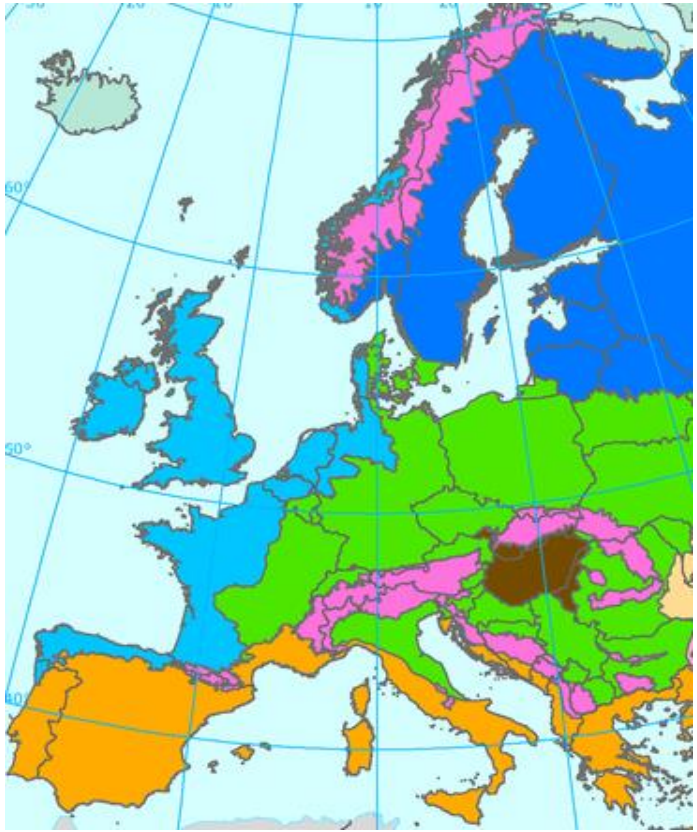
"any land dominated by grasses or herbaceous forage that can be grazed/mown and has not been included in the crop rotation of a holding for five years or more"

Ecosystem services & farming systems

- Ecosystem services (ES):
  - Food production
  - Biodiversity
  - Climate regulation (including carbon sequestration)
  - Water quality
  - Mediation of water flows
  - Erosion control
  - Landscape and recreation
- From ***intensified farming systems*** to ***remote*** and ***high-mountain*** areas
- Natural, semi-natural and agriculturally improved


WP1 & WP6 – Management & Ethics requirements
WP2 – Delivering sustainable systems
WP3 – Benchmarking & testing
WP4 – Securing performance
WP5 – Aiding decision-making
WP6 – Communication & Dissemination
Multi-actor & Transdisciplinary
UK
CH
CZ
DE
ES
FR
HU
IT
LV
ME
NL
PL
PT
SE
SI

SUPER-*G* five biogeographic regions



Boreal

Atlantic

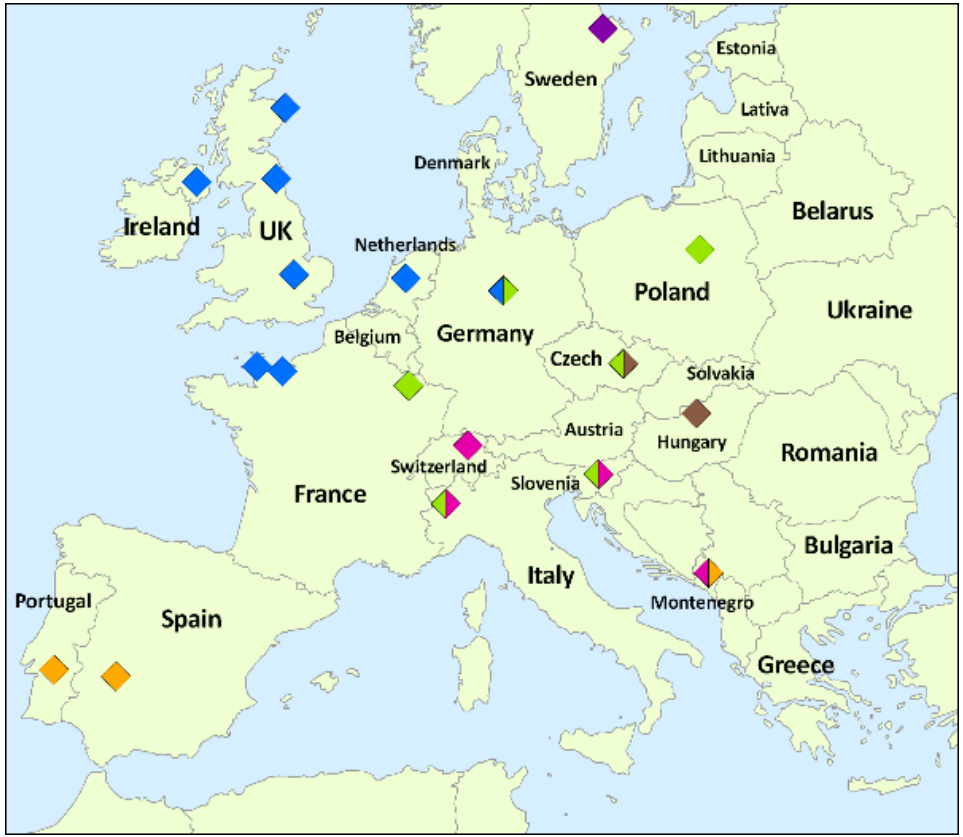
Continental ***(incl. Pannean)***

Alpine

Mediterranean

Source: https://www.eea.europa.eu/data-and-maps/figures/biogeographical-regions-in-europe-1/map_2-1_biogeographical-regions.eps/image_large

SUPER-*G* partner organisations



Atlantic

Continental

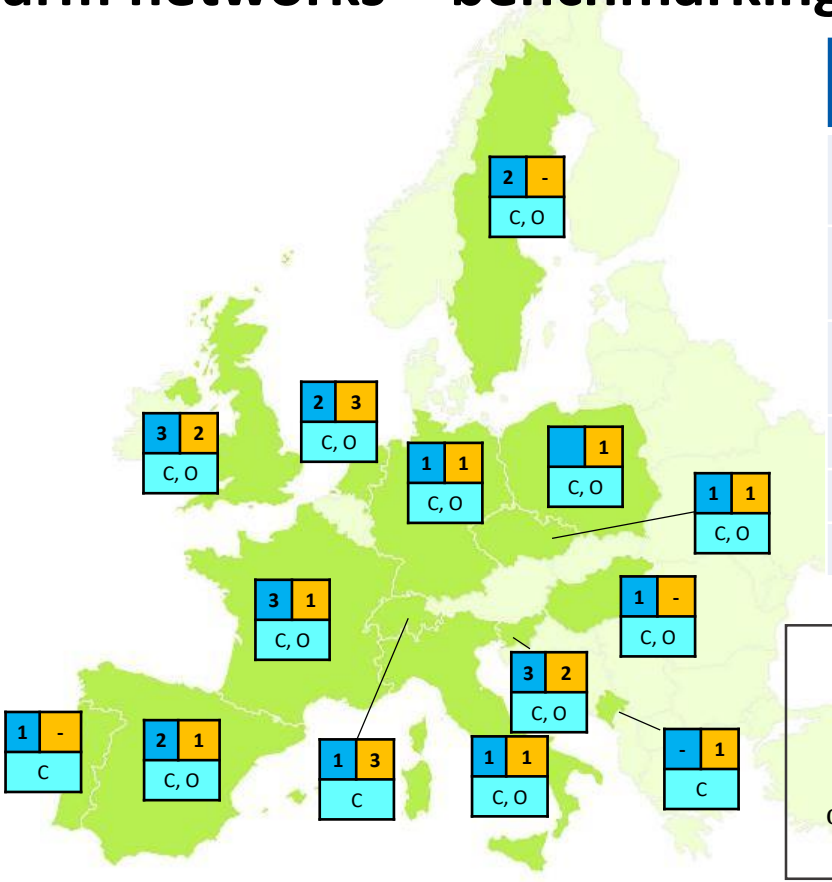
Pannonian

Alpine

Boreal

Mediterranean

Farm networks – benchmarking & testing



Livestock type	Biogeographic region	Country
Sheep	Alpine, Cont, Med, Boreal, Pan, Atl	CH, SI, UK, SE, FR, ES, PT, HU, ME, NL, DE
Dairy	Alpine, Cont, Med, Cont, Atl, Boreal, Pan	CH, SI, IT, NL, UK, FR, SE, CZ, PT, HU, ME, DE, PL
Beef	Alpine, Med, Boreal, Cont, Atl	CH, SI, IT, UK, SE, ES, PT, PL
Pigs	Med, Alpine	ES, PT, SI
Horses	Alpine, Cont, Boreal	DE, SE, SI
Goats	Alpine, Cont, Med	SI, PT

Networks

Conventional (C) or organic (O) networks

x x
C, O

Experimental platforms

Potential management practices

- Applying various grazing systems to improve productivity, grass utilisation and the delivery of other ES (e.g. C sequestration)
- Demonstrating and validating the use of canopy sensing to monitor grass growth and quality
- Testing virtual fencing for more flexible grazing management
- Using diverse seed mixes to investigate the potential to increase productivity in low input systems and tolerate drought and/or waterlogged conditions
- Providing enhanced pollination
- Combining robotic milking with grazing

Securing PG performance

- Consumer/citizen focus groups
- Monetary & non-monetary values
- Socio-economic drivers & barriers for farmer adoption
- Review existing policies & impacts
- Integrated approaches for permanent grassland management
- Developing appropriate policy options & information for decision support tool (DST) development

Decision Support Tools

- AgriNet Grass (Ireland)
- GrassCheck (UK)
- FARMAX (New Zealand)
- Healthy Grassland Soils (UK)
- Farmscoper (UK)
- Mountain Grazing Farmers (Slovenia)
- PastureBase (Ireland)
- Cows & Opportunities (Netherlands)
- Forage for Knowledge (UK)
- Free Walk Farmers (Europe)

- Long term grass growth and quality monitoring project
- Grass growth forecasting:
  - 7 day
  - 14 day
- Network of 48 commercial dairy, beef and sheep grass monitor farms
- Range of systems, land type, growth potential and management intensity

Grass growth

Grass quality

Weather data

Fig. 1: 2018 GrassCheck farm network

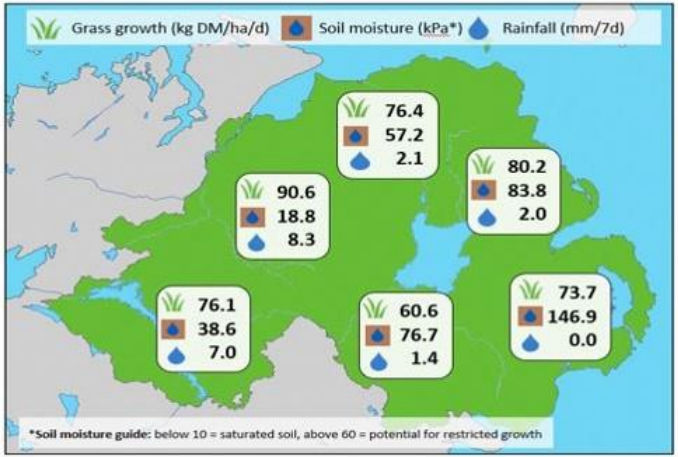
Fig. 2: Latest info available at AgriSearch.org/GrassCheck

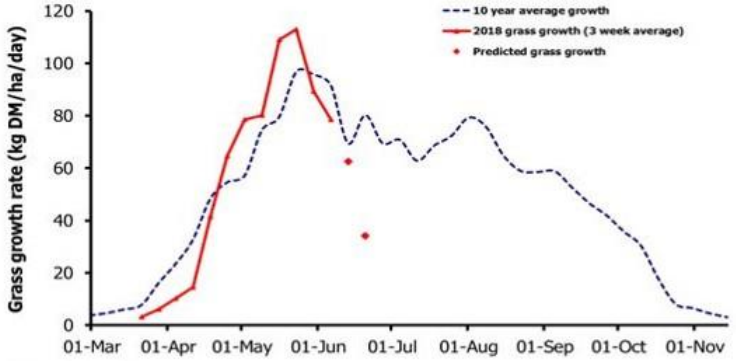
GrassCheck NI

afbi Agri-Food and Biosciences Institute

AgriSearch NI
Driving Excellence & Innovation

Week Beginning 11 June 2018





Weekly Grass Growth (kg DM/ha/day)		
GrassCheck plots		78.2
Dairy farms*		88.5
Beef & sheep farms*		71.5
Forecast	7 day	62.5
	14 day	34.2

Grass Quality	Plots	On-farm
DM (%)	21.8	19.6
ME (MJ/kg DM)	11.1	10.5
CP (% DM)	16.0	18.0
WSC (% DM)	15.7	10.6

*On-farm grass growth data supplied by AgriNet
#GrassCheck plots receive 270 kgN/ha/year

@GrassCheck

MANAGEMENT NOTES:

- Growth has fallen in the past week in line with predictions and due to the dry conditions experienced particularly in the eastern counties of N.I.
- Predictions this week show a dramatic fall in grass growth based on weather forecasts and current dry soil conditions at AFBI Hillsborough. These extremes haven't been witnessed since June 2008 and it is likely that these predictions will be localised to areas which continue to receive little rainfall.
- However, a large range in growth rates is currently evident across GrassCheck farms (24 – 137kg DM/ha/day). Wetter farms or those which have received localised heavy rainfall recently are expected to maintain current growth rates.
- Grass quality remains low across much of the province due to the stress on the plant from dry weather. Testing grass and reviewing current supplementation rates for stock to meet animal requirements for target performance.

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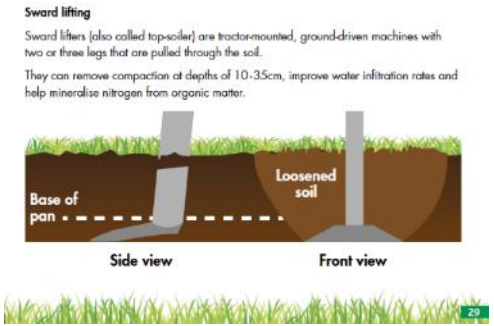
CIEL

Estimating crop available nutrients

PLANET
NUTRIENT MANAGEMENT

Healthy Grassland Soils

- Visual Soil Evaluation tool for grassland
- Origins – Peerlkamp (1967) and VESS (2009) - topsoil structure and porosity
- Focus on the most structurally damaged layer
- Link to management options



Approach to co-developing DSTs across Europe

- Review of existing tools and key gaps
- Farmer workshops to determine what tools should be developed
- Workshops for co-development and testing of farm level tools
- Development of farm level tools for assessment of productivity, profitability and ES

Conclusions

- PG are under threat, but important within many livestock grazing systems
- Need co-development of integrated approaches for profitable & sustainable PG management
- Need co-development of approaches, tools & policy mechanisms to:
  - Support profitable livestock grazing systems
  - Maintain PG & the rural communities that depend on them

Thank you!

SUPER-G

SUSTAINABLE PERMANENT GRASSLAND

SUPER-G SUSTAINABLE PERMANENT GRASSLAND

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