



# SUPER-G

SUSTAINABLE PERMANENT GRASSLAND

## Deliverable 6.11

### Final conference

This report only reflects the views of the author(s).

The Commission is not liable for any use that may be made of the information contained therein.

Project funded under the Horizon 2020 Research and Innovation Programme

#### Dissemination Level

PU	Public	<b>x</b>
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

## Contact Details

Name of Contact: Dina Lopes

Address: CONSULAI, Lda.

Rua da Junqueira, 61G, Piso 1

1300-342 Lisboa, Portugal

Telephone: (+351) 213 629 553

Mobile: (+351) 910 790 781

Email: [dlopes@consulai.com](mailto:dlopes@consulai.com)



## Contents

Summary .....	4
Abstract .....	6
1. Introduction .....	8
2. Programme-Agenda .....	10
3. Summary/results of the presentations and activities carried out during the conference .....	12
3.1. Session 1 – PG in Europe .....	12
3.2. Session 2a – PG Services .....	20
3.3. Session 2b – PG Management .....	29
3.4. Session 3 – PG Policies .....	42
3.5. Wrap-up session .....	52
4. Results .....	54
5. Conclusions and lessons learned .....	56
6. ANNEXES .....	60
Conference dissemination – before the event .....	60
Conference dissemination – after the event .....	66



## Summary

**Project Number:** 774124-2

**Project:** SUPER-G – Developing SUSTainable PERmanent Grassland systems and policies

**Duration:** 5 years 9 months

**Start date of Project:** 1st June 2018

**Project management:** ADAS

**Person in charge:** Paul Newell Price

**Deliverable:** D6.11

**Due date of deliverable:** 29/02/2024

**Actual submission date:** 29/02/2024

**Work package:** WP6

**Leader:** CONSULAI

**Person in charge:** Dina Lopes

**Author(s):** Carolina Ramos; Dina Lopes; Alexandre Falé; Marija Klopčič

**Contributor(s):** all SUPER-G partners

**Communication level:** Public

**Version:** 1

The SUPER-G project (Grant Agreement No.: 774124) has received funding from the European union' Horizon 2020 Research and Innovation Programme. The views and opinions expressed in this report does not represent the official position of the European Commission and is entirely the responsibility of the authors.



**Partners** in the SUPER-G project are:

Organisation	Acronym	Country
University of Newcastle upon Tyne	UNEW	UK
RSK ADAS Limited	ADAS	UK
The University Court of The University of Aberdeen	UABDN	UK
Mendelova Univerzita V Brne	MENDU	CZ
Magyar Tudomanyos Akademia Okologiai Kutatokozpont	HUN-REN ÖK	HU
Javna Ustanova Univerzitet Crne Gore Podgorica	UOM	ME
Sveriges lantbruksuniversitet	SLU	SE
Universita Degli Studi Di Torino	UNITO	IT
Stichting Wageningen Research	WR	NL
Eidgenoessische Technische Hochschule Zuerich	ETHZ	CH
Szkola Glowna Gospodarstwa Wiejskiego	WULS	PL
Georg-August-Universitat Gottingenstiftung Offentlichen Rechts	UGOE	DE
Agri-food & Biosciences Institute	AFBI	UK
Consulai, Consultoria Agroindustrial, Lda	CONSULAI	PT
Universidad de Córdoba	UCO	ES
Univerza V Ljubljani	UL	SI
Chambre Régionale d'Agriculture De Normandie	CRAN	FR
Association Normande de la ferme expérimentale de La Blanche Maison	LBM	FR
The Northern Ireland Agricultural Research and Development Council	AgriSearch	UK
CRA GRAND EST	CRAGE	FR
Wageningen University	WU	NL
Forschungsinstitut fur Biologischen Lanbau Stiftung	FiBL	CH

## Abstract

European permanent grasslands (PG) vary widely in their environment, agricultural management, and botanical composition. This diversity affects their potential for delivering ecosystem services, shapes the challenges and opportunities and challenges associated with their agricultural management, and determines the threats they face. The existence and management of permanent grasslands is key to the delivery of multiple ecosystem services (ES) across Europe. However, PG maintenance and functions are under threat from sub-optimal management of inputs, cultivation in higher output farming systems and abandonment in remote and marginal areas. The overall objective of the SUPER-G project was to co-develop sustainable PG systems and policies with farmers and policy makers that will be effective in optimising productivity, whilst supporting biodiversity and delivering several other ES.

The SUPER-G final conference, held on February 7, 2024, in a hybrid format (in Brussels and online), organised by CONSULAI, ADAS, University of Ljubljana and with all project partners involved, marked the end of five years and 9 months of intensive research and collaboration aimed at addressing the challenges and opportunities associated with permanent grasslands in Europe. The purpose of this conference was to provide an overview of some of the main project outcomes, to strengthen the SUPER-G network and to enable the exchange of knowledge and innovation between researchers and practitioners within and outside the consortium. The conference brought together leading experts, researchers, policymakers, farmers and stakeholders to discuss key findings, share insights, and chart a path forward for sustainable PG management.

The **Key Themes** and **Discussions** were: **Understanding PG Services** (presentations and discussions highlighted the crucial role of PG in delivering multiple ecosystem services such as biodiversity conservation, climate regulation, and soil health. Researchers emphasized the need to unlock the full potential of PG for multifunctionality by promoting extensification, preventing conversions, and fostering synergies); **Policy Implications** (policy experts provided insights into the current regulatory framework governing PG management in Europe, including the Common Agricultural Policy (CAP) and eligibility rules for support schemes. Discussions underscored the importance of aligning policies with societal expectations, enhancing communication, and incentivizing sustainable management practices); **Farmers' Perspectives** (farmer representatives shared their perspectives on PG management, highlighting the economic, environmental, and social benefits of PG. They emphasized the need for policies that support traditional farming practices, recognize the role of ruminants, and provide financial incentives



for sustainable management); **Innovation and Technology** (presentations showcased innovative tools and technologies developed through the SUPER-G project, such as decision support tools and virtual fencing. The tools aim to empower farmers, advisors, and policymakers to make informed decisions and enhance the delivery of ES from PG).

The conference concluded with reflections on the future of PG management in Europe. Participants highlighted the importance of integrating diverse perspectives, fostering collaboration, and adopting evidence-based approaches to address emerging challenges such as climate change, land abandonment, and biodiversity loss.

The main outcomes from the conference included: PG play a vital role in delivering multiple ecosystem services and must be managed sustainably to maximize their potential. Policy frameworks need to be adapted to align with societal expectations and support the conservation and enhancement of PG. Innovation and technology have the potential to empower stakeholders and improve PG management practices. Collaboration and knowledge exchange are essential for addressing complex challenges and shaping the future of PG management in Europe.

Moving forward, stakeholders are encouraged to continue working together to implement evidence-based solutions, foster innovation, and ensure the long-term sustainability of permanent grasslands in Europe. The SUPER-G project has set a solid base for future research, policy development, and on-the-ground action, setting the stage for positive change in the years to come.

While the virtual format of the conference presented some challenges in capturing the audience's attention, it allowed for a wider reach and accessibility for participants from all over the world. The organization of the final conference was a success, and the lessons learned from the event, and included in this report, will be valuable for future conferences and events.

All results and materials developed by SUPER-G project are available on the project's website:

[www.super-g.eu](http://www.super-g.eu)



## 1. Introduction

The existence and management of permanent grasslands (PG) is key to the delivery of multiple ecosystem services (ES) across Europe. However, PG maintenance and functions are under threat from sub-optimal management of inputs, cultivation in higher output farming systems and abandonment in remote and marginal areas. The overall objective of the SUPER-G project was to co-develop sustainable PG systems and policies with farmers and policy makers that will be effective in optimising productivity, whilst supporting biodiversity and delivering several other ES.

This context, and after 5 years and 9 months of work, has driven the SUPER-G project to organize a final conference not only to present the project results to an international audience but also to share experience and knowledge with other experts and stakeholders.

The SUPER-G final conference “Sustainable Permanent Grasslands (PG) in Europe: services, management and policies”, was held on the 7<sup>th</sup> February 2024, from 9.30am to 4pm CET, in a hybrid format (online and in Brussels). This event brought high-profile experts to create the necessary debate over the best solutions and strategies to manage permanent grasslands in Europe, including policies and future steps. The purpose of the conference was to share some of the key findings and outputs from the project, strengthen the SUPER-G network and to enable the exchange of knowledge and innovation between researchers and practitioners within and outside the consortium.

The main objectives of the conference were to discuss the following topics:

- The extent and state of permanent pastures
- Threats to permanent pastures and the provision of ecosystem services/essential public goods
- How to manage permanent pastures for multiple public goods/ What is sustainable management of permanent pastures?
- Better communication about the types of permanent pastures and their role in agricultural systems
- Attitudes, preferences and priorities of farmers and citizens towards permanent pasture management and the countryside
- Policy options to support the sustainable management of permanent pastures
- How food production and the provision of ecosystem services vary with the intensity of permanent pasture management
- How farmers can demonstrate the public goods provided by their permanent pastures.



This conference helped to support the sustainable management of permanent pastures across Europe, with some Europe's leading experts in the thematic.

For the conference, there were a total of 146 registrants from all over Europe and with different profiles. During the conference, we had more attendees than expected, with a total of 130 participants online and 36 in person.

The SUPER-G final conference successfully gathered leading experts and stakeholders to address the urgent need for sustainable management of permanent grasslands in Europe, promoting knowledge exchange and opening the way for informed policies and practices. With a large audience and committed participation, the event emphasised the importance of collaborative efforts to safeguard vital ecosystems for future generations.



*Figure 1 - SUPER-G final conference "Sustainable Permanent Grasslands (PG) in Europe: services, management and policies".*

## 2. Programme-Agenda



The poster features a background image of a rolling green landscape with hills and a forest. At the top center is the SUPER-G logo, followed by the text 'SUPER-G SUSTAINABLE PERMANENT GRASSLAND'. Below this, the main title 'SUPER-G FINAL STAKEHOLDER CONFERENCE' is displayed in large, bold, white letters. A white box contains the subtitle 'Sustainable permanent grasslands (PG) in Europe: services, management and policies'. Another white box below that specifies the date and time: 'WEDNESDAY 7TH FEBRUARY 2024 9:30 - 16:00 CET'. A third white box provides the location: 'Copa-Cogeca Offices in Brussels - Room B (Rue de Trèves 61, 1040 Bruxelles, Belgium) and online'. A large white button with a black border says 'REGISTER HERE!'. At the bottom, there is a white banner with the European Union flag on the left, a small text block in the center, and the SUPER-G logo and website 'WWW.SUPER-G.EU' on the right.

**SUPER-G**  
SUSTAINABLE PERMANENT GRASSLAND

**SUPER-G FINAL  
STAKEHOLDER  
CONFERENCE**

Sustainable permanent grasslands (PG) in  
Europe: services, management and policies

**WEDNESDAY 7TH FEBRUARY 2024**  
**9:30 - 16:00 CET**

Copa-Cogeca Offices in Brussels - Room B  
(Rue de Trèves 61, 1040 Bruxelles, Belgium) and online

**REGISTER HERE!**

 THIS PROJECT HAS RECEIVED FUNDING FROM  
THE EUROPEAN UNION' HORIZON 2020 RESEARCH  
AND INNOVATION PROGRAMME  
UNDER GRANT AGREEMENT N. 774124

 **SUPER-G**  
WWW.SUPER-G.EU

## PROGRAMME:

### WEDNESDAY 7th FEBRUARY 2024 - 9:30-16:00 CET

09h15	Tea/coffee & registration in Brussels
09h30 - 10h00	Online delegates joining the call
10h00 - 10h50	<b>Session 1 – PG in Europe   Chair: John Williams (ADAS)</b>
10h00 - 10h05	Welcome   <b>John Williams (ADAS)</b>
10h05 - 10h10	Introduction to the SUPER-G project   <b>Paul Newell Price (ADAS)</b>
10h10 - 10h30	PG in European agricultural and environmental policy   <b>Carlo Pagliacci (DG AGRI Economic Sustainability)</b>
10h30 - 10h50	PG and agriculture – the farmers' perspective   <b>Paul O'Brien (Copa-Cogeca)</b>
10h50 - 11h40	<b>Session 2a – PG services   Chair: John Williams (ADAS)</b>
10h50 - 11h10	PG in Europe – extent, condition, threats, communication, management & services   <b>René Schils (Wageningen Research)</b>
11h10 - 11h25	Permanent grasslands and biodiversity   <b>Mark Whittingham (Newcastle University)</b>
11h25 - 11h40	Permanent grasslands and climate regulation   <b>Mohamed Abdalla (Aberdeen University)</b>
11h40 - 12h00	Break
12h00 - 13h25	<b>Session 2b – PG management   Chair: Dina Lopes (CONSULAI)</b>
12h00 - 12h15	PG management & innovation   <b>Marija Klopčič (University of Ljubljana)</b>
12h15 - 12h35	Farmer priorities and preferences for PG management   <b>Lynn Frewer (Newcastle University)</b>
12h35 - 12h55	SUPER-G farm tool – supporting farmers to deliver multifunctionality   <b>Frances Titterton (Agri-Food &amp; Biosciences Institute – AFBI)</b>
12h55 - 13h25	What is the role of PG within European agricultural systems? What forms of innovation are needed and how can adoption be enabled?   <b>Panel discussion and Q&amp;A   Chair: Dina Lopes (CONSULAI)</b>
13h25 - 14h25	Lunch
14h25 - 16h00	<b>Session 3 – PG policies   Chair: Nina Buchmann (ETH Zurich)</b>
14h25 - 14h45	Citizen priorities and preferences for PG within rural landscapes   <b>Andy Jin (Portsmouth University)</b>
14h45 - 15h05	SUPER-G policy tool – how does PG management intensity affect multifunctionality?   <b>Richard Gooday (ADAS)</b>
15h05 - 15h25	What policies are needed to support sustainable PG management – workshop outcomes & policy briefs   <b>Erik Hunter (Swedish University of Agricultural Sciences - SLU)</b>
15h25 - 15h55	What does European society need from PG and how can it be delivered?   <b>Panel discussion and Q&amp;A   Chair: Nina Buchmann (ETH Zurich)</b>
15h55 - 16h00	Wrap Up
16h00	Close & tea/coffee in Brussels

Figure 2 - Final Conference Programme.

### 3. Summary/results of the presentations and activities carried out during the conference

The final conference took place in a hybrid format: in Brussels, at the COPA-COGECA offices - Room B (Rue de Trèves 61, 1040 Bruxelles, Belgium); and online via the ZOOM platform, managed by CONSULAI.

The final conference began with the reception and accreditation of participants, in person, in Brussels. At the same time, participants and speakers joining online were also welcomed.

#### 3.1. Session 1 – PG in Europe

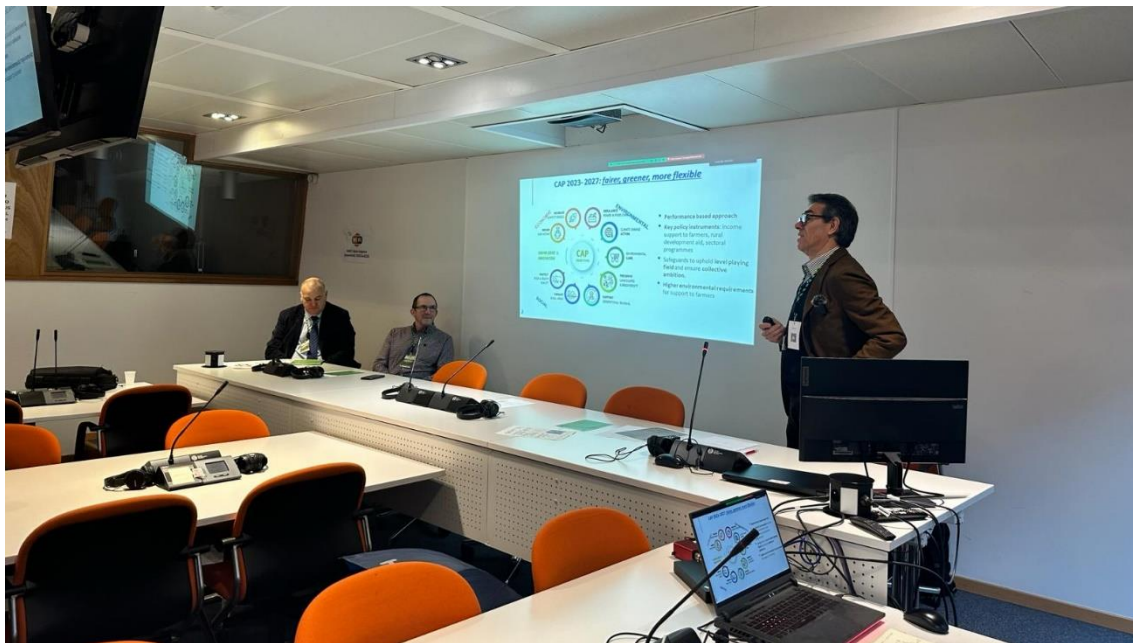


*Figure 3 - Session 1 - PG in Europe.*

The final conference started with Session 1 – PG in Europe, chaired by **John Williams**, from ADAS, the Scientific Director of the SUPER-G project, who started by welcoming the participants, presenting the programme, and introducing Paul Newell Price, from ADAS, the scientific coordinator of the SUPER-G project.

**Paul Newell-Price** introduced the SUPER-G project, provided a definition of Permanent Grassland (PG) and presented the aims, methodologies and outcomes/impacts of the project. The SUPER-G project has 22 project partners across 6 biogeographic regions. The potential of PG to deliver multiple ES was informed by benchmarking and testing, involving a network of farms (23 farm networks) and 17 experimental platforms, covering the Mediterranean, Atlantic, Continental, Alpine, Pannonian, and Boreal regions.

After this session, **Carlo Pagliacci**, Directorate-General for Agriculture and Rural Development (DG AGRI B1 Economic sustainability), presented “PG in European agricultural and environmental Policy”. Carlo Pagliacci focused on CAP objectives and instruments and presented an overview of the eligibility rules for permanent grassland and agroforestry systems in Europe.



*Figure 4 - Carlo Pagliacci presentation during Session 1.*

### Main challenges and observations:

- PG have an impact on most of the CAP 2023-2027 objectives (economic, environmental, social), which will be fairer, greener, more flexible.

### Key challenges:



- PG are mainly located in marginal areas.
- Adapting a performance-based approach to each country/local situations.
- Key policy instruments: income support to farmers, rural development aid, sectoral programmes.
- Safeguards to uphold level playing field and ensure collective ambition.
- Higher environmental requirements for support to farmers.
- Each member state can choose the CAP instruments on PG: Rural Development (AECM, ANC); Direct payments (BISS, Eco-Schemes); Coupled support (CIS) for beef, milk, sheep, dried fodder) (not with a direct link to PG but indirectly by animal grazing); Cross cutting instruments (Conditionality, AKIS, etc.).
- From 2006-2021, the quantity of meat production decreased, in particular sheep meat and goat meat – probably related with land abandonment.
- Not all member states changed the definition of permanent grassland, with inclusion of areas covered by trees and shrubs which produce animal feed when the grass is not predominant or absent (only Ireland, Cyprus, France (some regions), Spain and Greece). Some countries, where grass is not predominant, permanent grassland are only eligible if they are PG-ELP (Established Local Practices) – Belgium, Germany, Sweden, Portugal and Italy.

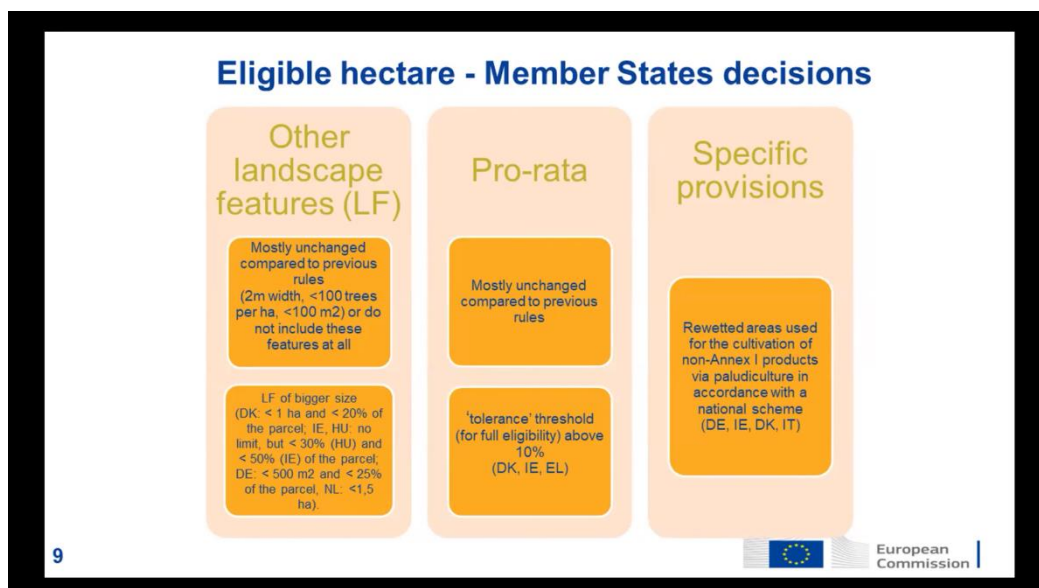


Figure 5 – Eligible hectare – Member States decisions, from Carlo Pagliacci' presentation during Session 1.

Key messages/Main outcomes:

- Areas with Natural Constraints (ANC) are present in all member states and there is a specific support (but it depends on the member state choice) that can fight land abandonment in these areas. These areas have on average less intensive farming, with extensive/low-input farming counters risk of land abandonment and helps sustain certain environmental conditions. Compensating higher production costs helps maintain agricultural activity and benefits social-economic context of these areas.
- It is necessary to create solutions that help convert new areas into PG areas and not just maintain existing ones, i.e. to overcome some current limitations related to environmentally sensitive areas in the Natura 2000 sites, while at the same time protecting habitats and species
- Eligibility rules changed from 1307/2013 to SPR – 2021/2115 regulation. Regulation (EU) 2021/2115 of the European Parliament and of the Council of 2 December 2021 establishes rules on support for strategic plans to be drawn up by Member States under the common agricultural policy (CAP Strategic Plans) and financed by the European Agricultural Guarantee Fund (EAGF) and by the European Agricultural Fund for Rural Development (EAFRD) and repealing Regulations (EU) No 1305/2013 and (EU) No 1307/2013.
- Flexibility - each member state must adapt the policies according to their systems and needs.

The next key-note speaker was **Paul O'Brien**, from COPA-COGECA, who joined us online, with his presentation on “PG and agriculture – the farmers’ perspective”. Paul O’Brien is the Irish Farmers’ Association (IFA) Regional Chair for South Leinster. Prior to that, Paul served a four-year term as Chair of the IFA National Environment and Rural Affairs Committee from 2020 to January 2024. Paul is from Graiguenamanagh, Co. Kilkenny where he runs a sheep and tillage enterprise. Paul has been involved in the Irish Farmers’ Association over the past 20 years holding various positions. Paul presented the current state of play in the agricultural sector on permanent grassland, the three sustainability pillars (environmental, economic, and social) and the important role of ruminants for agriculture and for permanent grasslands. After presenting some of the main policy frameworks for the animal sector, he talked about the progress achieved in the past years and current initiatives and policies. Paul ended his presentation with some conclusions about the future potential of the sector and the tools needed to deliver:



- Permanent Grasslands are fundamental to the European agricultural way of life.
- But also, they are a cornerstone of our biodiverse ecosystems across the Union, and must be protected to support important economic and social sustainability in rural areas.
- Their management is something that evolves, and European farmers and agri-cooperatives strive to achieve reductions in GHG emissions and improvements in other environmental issues, as long as they are supported in doing so.



*Figure 6 - Paul O'Brien presentation during Session 1.*

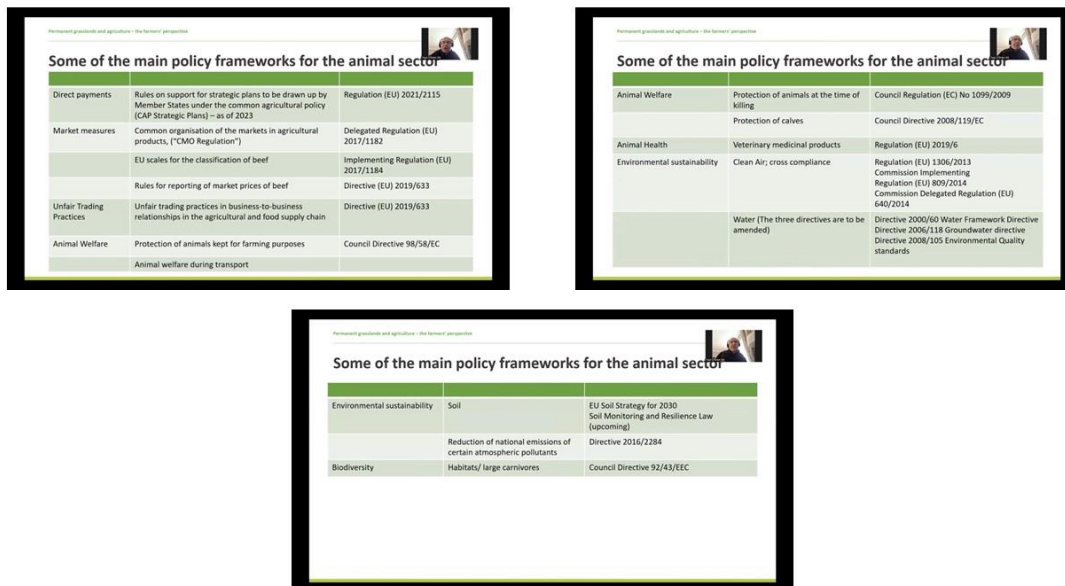
#### Main challenges:

- Ensuring Viability and Sustainability of Ruminant Production Systems, considering Economic Pressure, Environmental Concerns, Policy Complexity and Alignment, Global Competition, Social Sustainability, Technological Innovation; Market Mechanisms and Regional Support.

#### Key challenges:

- Current state of play in the agricultural sector on permanent grassland:
  - Beef: Estimated 75 million head of cattle in the EU (2020) - EU gross beef production is expected to fall by 0.6 million t (-9%) between 2022 and 2032. The total EU cow herd is set to decrease by 2.1 million heads (-7%) by 2031.

- Sheep: Estimated 59 million head of sheep (2022) in the EU27, down from 63 million in 2018
- Goat: Estimated at 11 million goats (2022)
- The importance of permanent grasslands is related to the sustainability pillars set out by the UN with Sustainable Development Goals:
  - Environmental: water and air quality, climate, preservation of biodiversity, energy resources, preservation of landscapes etc.
  - Economic: overall economic performance, territorial dynamics, fair distribution of value (particularly regarding producers' income)
  - Social: working conditions, practices, respect for human rights, health and safety, animal health and welfare etc.
- The notion of sustainability must also take account of all services provided by agriculture and not be limited to negative externalities. A holistic approach factoring in all environmental considerations is what is needed. For example, cattle farming is often singled out as conflicting with environmental and climate protection, but we must not forget its positive impacts in preserving biodiversity (3.5 tons of fauna present in the soil of 1 ha of grassland) or those of hedges which are conducive to maintaining grasslands.
- Regarding the role of ruminants for agriculture and for permanent grasslands, the ruminant production systems in the EU are:
  - Critical for maintaining livelihoods, including farmers' income, in areas without other realistic alternatives;
  - Located in areas suited to this type of production (no deforestation);
  - Important for achieving environmental equilibrium in those regions because grasslands, with hedges, maintained by livestock are a source of diversity in the European landscape;
  - Indispensable for maintaining pastures as carbon stores and sinks;
  - Subject to some of the strictest production standards and controls in the world
  - Supporting the family farm concept (an EU livestock farm uses on average 34 ha of land and has around 47 livestock units).
- Some of the main policy frameworks for the livestock sector were presented (figure bellow) but the regulations are not easy to understand and the eligibility conditions, although necessary since we are talking about public fundings, are not always applicable or adapted to the reality of farmers.



**Some of the main policy frameworks for the animal sector**

Area	Policy Framework	Regulation/Directive
Direct payments	Rules on support for strategic plans to be drawn up by Member States under the common agricultural policy (CAP Strategic Plans) – as of 2023	Regulation (EU) 2021/2115
Market measures	Common organisation of the markets in agricultural products, ("CMO Regulation")	Delegated Regulation (EU) 2017/1182
	EU scales for the classification of beef	Implementing Regulation (EU) 2017/1184
	Rules for reporting of market prices of beef	Directive (EU) 2019/633
Unfair Trading Practices	Unfair trading practices in business-to-business relationships in the agricultural and food supply chain	Directive (EU) 2019/633
Animal Welfare	Protection of animals kept for farming purposes	Council Directive 98/58/EC
	Animal welfare during transport	

Area	Policy Framework	Regulation/Directive
Animal Welfare	Protection of animals at the time of killing	Council Regulation (EC) No 1099/2009
	Protection of calves	Council Directive 2008/119/EC
Animal Health	Veterinary medicinal products	Regulation (EU) 2019/6
Environmental sustainability	Clean Air; cross compliance	Regulation (EU) 1306/2013 Commission Implementing Regulation (EU) 809/2014 Commission Delegated Regulation (EU) 640/2014
	Water (The three directives are to be amended)	Directive 2000/60 Water Framework Directive Directive 2006/118 Groundwater directive Directive 2008/105 Environmental Quality standards

Area	Policy Framework	Regulation/Directive
Environmental sustainability	Soil	EU Soil Strategy for 2030 Soil Monitoring and Resilience Law (upcoming)
	Reduction of national emissions of certain atmospheric pollutants	Directive 2016/2284
Biodiversity	Habitats/ large carnivores	Council Directive 92/43/EEC

Figure 7 - main policy frameworks for the animal sector, from Paul O'Brien' presentation during Session 1.

- The EU's GHG emissions from agriculture (including livestock) saw a reduction of -25.2% between 1990-2019 in the EU. This was due to the reductions in agricultural emissions of methane by 21% (enteric fermentation by 22% and manure management by 17%) and nitrous oxide by 19%.
- Between 1990-2016, a significant reduction in emissions had already been achieved.
- However, the EU's emission reductions have been offset, at least in part, by increased production outside the EU. Imports of food and drink into the EU have, for example, increased significantly since 2002, according to Eurostat.
- Maintaining permanent pasture-based systems avoids land abandonment and acts as an important carbon store (34% of the utilised agricultural area in the EU-27 is under permanent pasture and is maintained due to livestock activity). Carbon storage in grasslands is not yet accounted for when measuring the sector's contribution to reducing GHG emissions and it should be as it represents an important share.
- Losing production to less efficient regions outside Europe would automatically entail carbon leakage, as the Joint Research Centre (JRC), the European Commission's science and knowledge service, noted in their 2020 analysis of the Farm to Fork Strategy.

Paul O'Brien's key messages:

- Any additional drop in EU livestock numbers could lead to a shift in production towards other parts of the world and to the abandonment of certain types of land upon which grazing is the only means of maximising the land's agricultural potential.
- Any policies aimed at reducing EU beef & veal production would be inadvisable, not only from a social or economic point of view, but also from a purely environmental perspective.
- The ruminant sector is committed to continue contributing to the EU's GHG emission goals with the help of research and technology.
- EU farmers/livestock producers are involved in voluntary initiatives, such as Life Beef Carbon to test out further possibilities for identifying and developing climate-friendly farms and practices.
- Mitigation options that provide multiple environmental benefits must be favoured when considering ways to allow the sector to reduce its impact on climate change (pasture and grassland-based livestock systems can simultaneously contribute to carbon sequestration, biodiversity protection, water storage and the preservation of water quality as well as to the prevention of fires, floods, and erosion).
- Support for cattle production in marginal agricultural land as well as in mountainous regions should be improved – benefit to biodiversity and landscape management.
- Social sustainability should be recognised and legally defined.
- Carbon credits and carbon markets to be properly established.

After each presentation, there was an opportunity for questions from participants in Brussels and online (in the Zoom chat).

### 3.2. Session 2a – PG Services

After session 1, John Williams introduced session 2a on PG services.



*Figure 8 - Session 2a - PG Services.*

The first key-note speaker from session 2a was **René Schils**, from Wageningen Research, who joined us online, with his presentation on “PG – Unlocking their potential for delivery of multiple ecosystem services”. In the SUPER-G project, René leads the work package on ecosystem services delivery from permanent grasslands.

#### Main challenges:

- Unlocking the potential of permanent grassland across Europe for multifunctionality (i.e. the delivery of multiple ecosystem services)



*Figure 9 - René Schiils presentation during Session 2a.*

**Key challenges:**

- European permanent grasslands (PG) vary widely in their environment, agricultural, management and botanical composition. This diversity affects their potential for delivering ecosystem services, shapes the opportunities and challenges of their agricultural management, and determines the threats they face. The SUPER-G project has developed a PG type Atlas that aims to capture this diversity, using a typology that is based on grassland management intensity.
- Two typologies were developed in the SUPER-G project:
  - Farming systems typology – based on 3 criteria: Proportion of permanent grassland, Livestock species and Stocking rates.
  - Permanent grassland typology – which at a first level is based on 4 main criteria: Presence of management, Woody plant cover, Full renewal at least every 15 years and management intensity. It is designed to complement (not replace) existing classification schemes. PG types at similar levels of management intensity provide similar levels of multifunctionality.

SUPER-G permanent grassland typology			
No management	Unmanaged grassland	With succession towards non-grassland Remaining grassland	
Woody plant cover $\geq 10\%$	Woody plant (mostly shrub) cover $\geq 10\%$	Low intensity Medium intensity	Woody plant (mostly tree) cover $\geq 10\%$ Low intensity Medium intensity
Full renewal at least every 15 y	Frequently renewed PG	Mostly grazed Mostly cut	
Management intensity	High-intensity PG	Mostly grazed Mostly cut	
	Medium-intensity PG, marginal climate	Mostly grazed Mostly cut	Medium-intensity PG, favourable climate Mostly grazed Mostly cut
	Low-intensity PG, marginal climate	Mostly grazed Mostly cut	Low-intensity PG, favourable climate Mostly grazed Mostly cut

Figure 10 - Permanent grassland typology developed in SUPER-G project, presented by René Schils, in Session 2a.

- The area of permanent grasslands depends on the biogeographic region: in the Atlantic and Continental regions there are approximately 30 Mha of PG; 15 Mha in the Mediterranean region and 10 Mha or lower in the other regions (Alpine, Boreal, and Pannonian regions).
- The distribution of PG types varies between the different biogeographic regions:
  - Frequently renewed and high intensity PG occupy c. 25% of the area in the Atlantic region and 10-15% in the Continental region, but represent a large area in Europe.
  - Medium intensity PG represent 40 to 60% of PG in Europe.
  - Alpine and Boreal regions are characterized by low intensity PG.

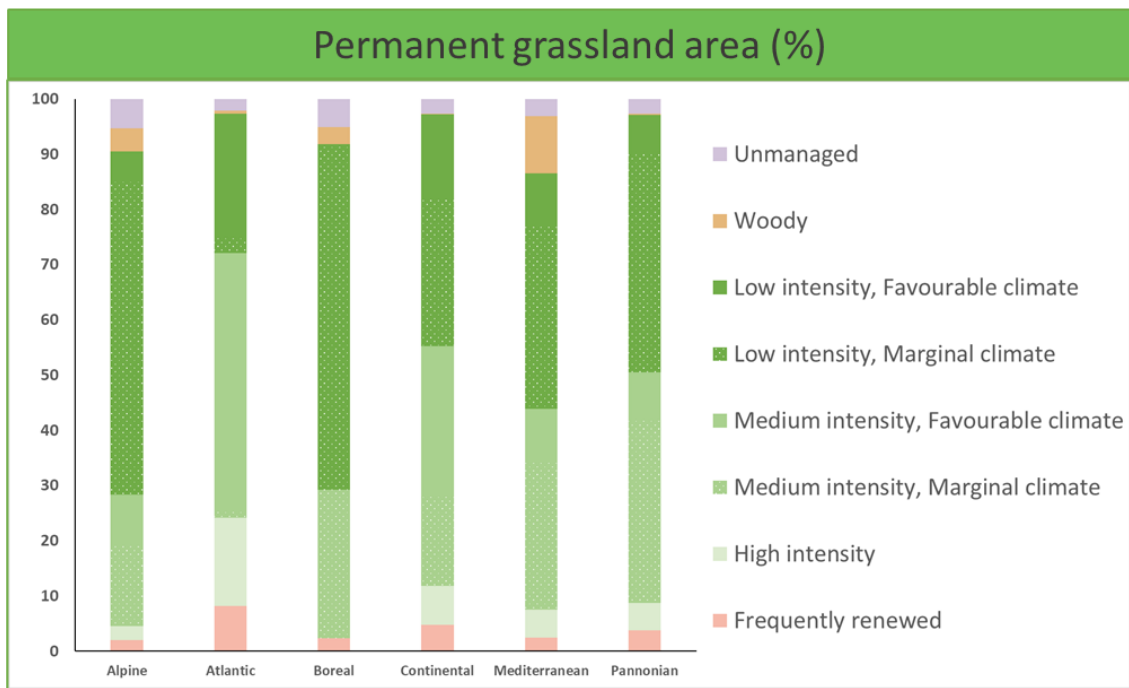


Figure 11 - Permanent grassland areas in the different biogeographic regions, presented by René Schils, in Session 2a.

- The PG type Atlas is a spatial representation of PG types across Europe. The maps provided in the Atlas are derived from datasets describing habitat classes, climate, soil properties, slope, and the presence of dedicated areas for nature protection. These have been used to calculate the probability that a grassland belongs to a certain PG type, based on expert knowledge. PG type 'portraits' are also available on the SUPER-G website.
- The SUPER-G project considered the ability of PG and PG management practices to deliver 6 ecosystem services (using different agri-environmental indicators), based on a literature review of scientific papers, meta-analyses and an expert elicitation methodology:
  - Recreation and aesthetics
  - Water quality
  - Biodiversity
  - Climate regulation
  - Erosion and flood control
  - Animal feed

**Key messages/Main outcomes:**

- PG are very important for biodiversity and ecosystem services.
- To unlock the potential for multifunctionality actions depend on the baseline and individual circumstances and will determine whether to focus on: extensifying, preventing conversions, preventing land abandonment (e.g. intensifying) or looking for synergies.
- Key enablers of success:
  - Evidence of effectiveness;
  - Support and advice to implement new technologies;
  - Funding training in the use of technologies;
  - Good knowledge transfer between farmers.
- Key barriers:
  - Farmer awareness and knowledge;
  - High initial resource cost (lack of incentive);
  - Lack of financial support;
  - Issues with ease of use.
- The SUPER-G project produced a set of factsheets focused on different PG management options. These are available on the SUPER-G website.

The next speaker was **Mark Whittingham**, who gave us a presentation on “Permanent Grassland and Biodiversity”. Mark is a Professor of Applied Ecology at Newcastle University, and his research focuses on issues of sustainability, ecosystem services and biodiversity particular within farming systems.



*Figure 12 - Mark Whittingham presentation during Session 2a.*

**Main challenges:**



THIS PROJECT HAS RECEIVED FUNDING FROM  
THE EUROPEAN UNION 'HORIZON 2020 RESEARCH  
AND INNOVATION PROGRAMME  
UNDER GRANT AGREEMENT N. 774124

### Key challenges:

- Biodiversity - PG is normally managed with lower inputs of fertiliser and other agro-chemicals than temporary grassland or arable land and is therefore often associated with higher biodiversity and some rare species. For example, of the 13,905 species assessed by the IUCN Red List (accessed on 30/01/24) which occur on grasslands, 23% are at threat of extinction (categorized as Vulnerable or higher in Risk of Extinction categories).
- Using a multidisciplinary systematic literature review, with focus on European experimental field studies, the SUPER-G project examined the effects of land use and management on 19 grassland ecosystem service indicators – 16,201 papers on biodiversity were identified (from a total of 70,456 screened); 74 papers were finally included in the systematic review (threatened species (TS): 21, plant species richness (PR): 38 and pollinators (Poll):15) following data screening.
- Land Use Change – There were higher levels of threatened species and plant species richness for PG compared to croplands and temporary grasslands and forests. For pollinators, favourable outcomes for PG compared to temporary grassland were most often reported.
- Management - Nitrogen input and increased defoliation frequency have significantly unfavourable effects on all biodiversity indicators. A greater number of species in the sward had significantly favourable effects on biodiversity. There was also a consistent favourable effect of legumes in the sward for the abundance of pollinators.
- In relation to the effects of nitrogen fertilisation on plant species richness in European PG, a meta-analysis of 34 control-treatment effects from 14 studies was conducted across nine European countries. There was a negative linear relationship between nitrogen fertilisation rate and change in plant species richness, and no evidence of a non-linear relationship.
- Agriculturally improved and semi-natural permanent grasslands provide complementary ecosystem services - as expected, semi-natural PG had the highest number of vascular plant species and more red-listed plant species. However, improved PG can be important for pollinator resources (nectar producing plants) and forage production (cover of palatable grass).
- PG can be managed to benefit pollinating insects and maintain yield & forage quality:

- Increasing the number of forb species in an environment increases invertebrate biodiversity;
- A two-cut management approach can increase insect species abundance and richness, by reducing competitive grass and weed species cover and promoting the establishment of less competitive flowering species;
- Increasing the number of forbs and a two-cut system (cf. one cut) had no significant effect on grass yield, grass digestibility or soil carbon storage (SOC or carbon stock).

**Key messages/Main outcomes:**

- Biodiversity-ecosystem functioning experiments inform stakeholders how to simultaneously conserve biodiversity and increase ecosystem service provisioning in grasslands.
- SUPER-G project work found robust evidence that increased fertilizer input (particularly nitrogen) and increased cutting/grazing both reduce biodiversity in grassland systems.
- The relationship between nitrogen input and biodiversity was found to be negative and linear (no evidence of non-linearity).
- There are specific situations where cutting and increased inputs can increase some biodiversity related ecosystem services (e.g. pollinator abundance although not diversity).
- Inclusion of deeper rooting species and specific high yield species in swards are likely to provide yield (e.g. through drought resilience) and other services (such as resources for pollinating insects).
- Rarer grassland species are likely to be associated with long-term 'no or very low input' systems.
- A combination of protection of high value sites and context-specific solutions can yield increased ecosystem services with win-win scenarios but not in all cases.

The next key-note speaker was **Mohamed Abdalla**, from University of Aberdeen, who joined the conference online, with a presentation on "Permanent Grasslands and Climate Regulation".

### Main challenges:

- Soil organic carbon is an indicator of soil quality and soil carbon sequestration (where possible) can be a means of offsetting carbon dioxide emissions to the atmosphere, i.e. climate change mitigation.



*Figure 13 - Mohamed Abdalla presentation during Session 2a.*

### Key challenges:

- European topsoils contain significant amounts of carbon, ranging between 40 to 400 tonnes carbon per hectare (t C/ha) for north European countries (e.g. Ireland, UK, The Netherlands, Finland), 80 to 250 t C/ha in western and central Europe (e.g. France and Germany) and 40 to 180 t C/ha in southern Europe. On average, there is 82 t C/ha in European topsoils, while the soil organic carbon (SOC) content in grassland topsoils can reach up to 400 t C/ha. Permanent grasslands represent around 30% of the agricultural area and yet they store 5.5 Gt of soil carbon in their topsoils, compared with 7.7 Gt of carbon stored by arable topsoils.

- From 2009 to 2018, changes in SOC were modelled and ranged between about -8 to +8 tonnes carbon per hectare, with losses mainly concentrated in northern Europe (mainly due to increases in temperature), while soil organic carbon contents in southern Europe were more stable. Overall, there was an estimated (modelled) 7% reduction in soil organic carbon over this decade.

Land use change results in gains and losses of soil carbon, and yet, using a 2009 baseline, converting all grassland (47 million ha) to arable land would only reduce the amount of SOC by 4.8%; converting all cropland (116 million ha) to grassland would increase SOC by 12.1%.

- The carbon budget over 16 years was quantified in an experiment and indicated significant interannual variability, mainly due to the variations in management (e.g. applying organic manure or reseeded) and weather (e.g. drought). Whether grasslands are a source or sink for carbon therefore depends on management and environmental conditions.
- Carbon fluxes in grassland depend on carbon imports – In an experiment in Switzerland, grassland was a C source without organic C (and related N) imports as slurry. There are therefore trade-offs between C sequestration and nitrous oxide emissions in ‘climate-smart’ agriculture.
- Based on modelling, most grasslands are a sink for GHG emissions unless enteric methane emissions from ruminants are included in the calculation. However, enteric methane emissions are expected to decrease in the future due to increased temperatures under climate change and reduced ruminant livestock numbers.
- Liming of grasslands increases soil pH and grass yields.
- Increasing the number of plant species in grassland increase SOC at different depths.

#### Key messages/Main outcomes:

- Soil carbon stocks in grasslands are high with minimal reductions occurring overtime.
- Fluxes and C sink depend on management and environment.
- Vegetation performance plays an important role in N<sub>2</sub>O losses.
- Climate change will boost N<sub>2</sub>O emissions while reducing enteric CH<sub>4</sub> emissions.
- Applying lime to grasslands optimises soil pH and increases biomass productivity.
- Biodiversity significantly impacts soil carbon dynamics across different soil depths.

After each presentation, there was an opportunity for questions from participants in Brussels and online (in the Zoom chat).

### 3.3. Session 2b – PG Management

After a short coffee-break, the final conference continued with Session 2b – PG Management, with **Dina Lopes**, from CONSULAI, chairing the session. Dina Lopes is the leader of the Communication and Dissemination WP in the SUPER-G project.



*Figure 14 - Session 2b - PG Management.*

Dina introduced **Marija Klopčič**, from University of Ljubljana, the first key-note speaker of Session 2b. Her research and work are in the field of cattle breeding, namely in dairy cow: housing systems, management, grazing and heifers, and use of various sensor applications. She was the leader of the SUPER-G “Benchmarking and Testing” work package and gave us a presentation on “Permanent grassland management & innovation”.



*Figure 15 - Marija Klopčic presentation during Session 2b.*

### Main challenges:

- The need to overcome financial barriers and incentivize innovation in grassland management, including addressing high costs, low perceived benefits, and inadequate support mechanisms for farmer.

### Key challenges:

- In 2019, a comprehensive survey was conducted with 352 farms, designed to gather information on farm characteristics and PG management. Statistical analysis to show how the biogeographic areas varied. In 2023, the survey was repeated with 184 of the original farms – the survey was designed to measure magnitude and direction of change within PG management and farm characteristics. Of the 184 surveys returned, 21.7% reported an increase in farm area, and 9.8% reported a decrease in farm area. Analysis was ongoing.
- There were some significant differences between the farm networks representing the six biogeographic regions in trends in improved PG management intensity, with most farmers in the Alpine, Atlantic and Mediterranean farm networks reporting that management intensity had increased. Most farmers in the Continental and Pannonian networks reported that management intensity had not changed, whereas farmers in the Boreal networks reported that PG management intensity had decreased over the last 10 years.
- Correlations between European farm data were investigated and used to simulate indicators for ecosystem services related to farm economics and permanent grassland management - Applied to specialised dairy farms (selected from the survey in 2019) – results showed that higher milk production intensity (per ha) correlates with higher rent charge of PG. Rationale: higher revenues from main product (milk) are needed with higher production costs.

- Milk production affects PG management and related ecosystem services (for example, higher milk production requires more feed, partly from PG, which may negatively affect PG plant diversity).
- SUPER-G farm networks organised co-innovation workshops to discuss the challenges of managing PG and the merits and risks associated with adopting various PG management options, as well as agricultural policy and farm support. Co-innovation farm workshops also provided an opportunity to discuss results of trials, experiments, and demonstrations and to explore areas for 'road testing'.
- PG management challenges (responses from co-innovation farm workshops):
  - Stony / wet / shallow soils
  - Sloping land
  - Sward composition
  - If/when to reseed?
  - What seed mix?
  - Adapting to more extreme weather patterns
  - Improving grazing management
  - Weed control
  - Cost/benefit of management interventions
  - Improving the utilization and nutritional quality of grass
  - Length of tenancies
  - Lack of incentive to retain PG
  - Conflicts between productivity and ES such as biodiversity, recreation, ...
- Key themes for trials & field experiments:
  - New Grassland Species / Diverse Species Swards
  - Precision Grassland & Grazing Management
  - Nutrient Management Innovations
  - Agri-environmental innovations
  - Using locally harvested seeds for re-vegetation
  - Education and citizen science
- Regarding the trials and experiments on Multi-Species Swards / Diverse Species for the Atlantic Area: Yields were similar or better than pure grass swards with lower fertiliser; Establishment can be challenging; Soil health benefits / variable results on infiltration; Clear biodiversity benefits; Climate adaptation (drought resilience); Tend to be lower

protein and dry matter (but higher minerals) but animal performance does not suffer; Debate over optimum entry and exit covers for MSS; and Potential animal health benefits. For other Biogeographic regions: Establishment can be challenging (weed control and persistence); Costs of establishment; Mixed results on yield.

- Regarding the trials and demonstrations with virtual fencing, the trials considered animal welfare (with a limit on the number of pulses received/ maximum stocking densities). Farmers found that the technology is easy to operate and has great potential for managing sensitive sites. However, the costs for farmers is still high and it's necessary to understand that, for now, the productivity benefits will not “pay” for the technology. Sustainable farming schemes may support its use in the future - uptake of the technology will need technical and financial support because “technology is moving faster than policy”.

#### Key messages/Main outcomes:

- The main barriers to innovations in grasslands were money/costs too high, benefits too low, too little technology on farm, and risk. There is lack of: Proof of concept; Opportunity to learn from other farmers; Technical support and financial support.
- Establish farmer confidence to adopt technologies (where appropriate) by providing independent evidence of efficacy in a variety of settings.
- Rapid adoption of technologies will only occur if farmers are convinced of benefits.
- Support further data collection and field trials to demonstrate benefits at farm level.
- Empower farmers to manage grasslands for ecosystem service delivery, e.g., financial support alongside training to show how certain grazing strategies can support biodiversity.
- Fund training in the use of technologies.
- Ensure adequate connectivity for the use of apps etc. in rural areas.
- Make upfront capital grants available for purchasing virtual fencing, GPS collars, improved farm infrastructure, and satellite/drone technology.

After this presentation, **Lynn Frewer** from Newcastle University, joined the conference online with her presentation on “Farmer priorities and Preferences for PG management”. Lynn Frewer is a Professor of Food and Society in Newcastle University, UK, since 2011 and her research

interests are focused on food production and society, in particular transdisciplinary research on agrifood systems from a social science perspective.



*Figure 16 – Lynn Frewer presentation during Session 2b.*

#### Main challenges:

- To assess socio-economic facilitators of, and barriers to, adoption of sustainable PG systems in different biogeographic regions.
- To provide evidence for, and develop, policy options to support PG management in each biogeographic region.
- To maximise research impacts through knowledge exchange and consultation with key stakeholders and end-users.

#### Key challenges:

- The studies were focused on the main economic influences shaping management and maintenance of PG, the risks and opportunities for delivery of a range of ecosystem services associated with PG. (e.g. productivity, regulatory, supporting, and cultural), and how does policy, in particular CAP, shape the management of EU grasslands over time and across farming systems, countries, or biogeographic zones.
- The shift from direct payments under CAP for PG farmers is a huge transition.
- PG farmers across the diversity of PG environments in Europe are highly dependent on subsidies to mitigate economic pressures.

- Direct payments tend to encourage farmers to do what they do already, and there is no need for them to produce evidence of change.
- Farmers can change land use or intensify grassland management while receiving direct payments.
- Targeted and locally focused approaches are needed to maintain and improve the provision of ES from grasslands (Agri-Environment Schemes).
- Many PGs are associated with valued landscapes, and this can provide opportunities for diversified income streams. e.g. Tourism, Food processing, Environmental management
  - Supported by market premiums (e.g., organic, pasture-based).
- “Tipping Points” for farmers decisions associated with policy are not really understood.
- Farmer intentions in relation to future extensification/ intensification – We still need to improve understanding of what the “sweet spot” is in terms of ES delivery and progression to Net Zero; Access to advice and technology; How might this be incorporated into policy; National Agri-environment schemes; Concern that payments may reflect “change” rather than maintaining good practices. Some “stewardship” schemes problematic (public access and payments for biodiversity rather than land use change).
- Farmers’ decisions can be understood as critical thresholds, or behavioural tipping points.
- Farmers require financial incentives and technical guidance to trigger positive tipping points.
- Changes to agri-environmental schemes and subsidy programmes are needed to deliver more ES from PG.
- Other decision drivers include personal values, (perceived) agronomic barriers, and consumer demand.

#### Key messages/Main outcomes:

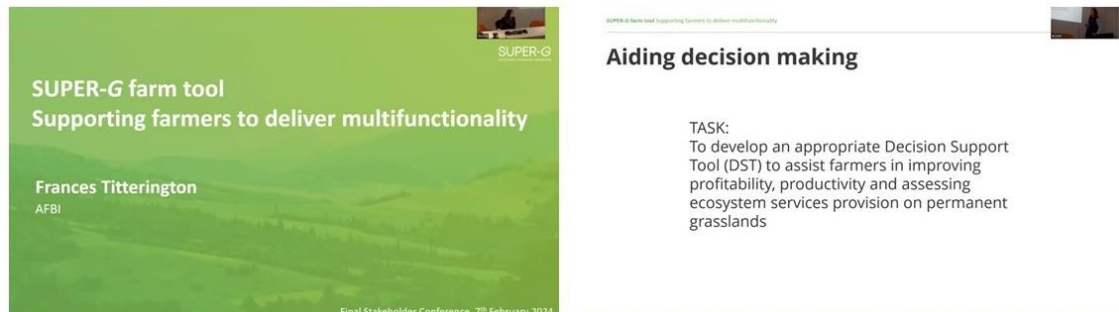
- Key Results of Mixed Methods research with farmers:
  - Farmers agree that PG are important for delivering a variety of Ecosystem service;
  - Specific prioritization varies between countries;
  - Provisioning services are a priority compared to regulatory, supporting and cultural services;



- Most farmers think that the public value PG for: aesthetic and landscape appeal; the quality of food products and the maintenance of PG land.
- Changes are needed to maintain or improve ES from PG:
  - Mostly related to improving or maintaining environmental goods and services
  - Smaller number of farmers focusing on profitability or yield as goods and services to be improved.
- Current risks and challenges of improving ES from PG:
  - Learning new skills in relation to technological innovation
- Influencing factors on farmers' decision-making about PG:
  - farmers' own knowledge and understanding
  - farm systems and practicality
  - economic factors (profitability, stability of their income, etc.)
- Future changes to PG:
  - Most farmers plan to continue their current practices into the future to maintain (perceived) current benefits.
- Farmers require financial incentives and technical guidance to trigger positive tipping points. Changes to agri-environmental schemes and subsidy programmes are needed to deliver more ES from PG. Land use/ management change should be appropriate, context-specific and align with farming values. Flexibility in (e.g.) payments, including stacking and assessment metrics: Land abandonment; Stocking density.
- Citizens' concerns and priorities: Citizens perceived grassland landscapes positively (Experience, Emotions, Environmental characteristics, Access, Cultural identity). Perceptions of problems were related to: Reduction, Degradation, Abandonment of grassland. Farming for biodiversity and trust in policy and land managers predicted acceptability of current practices.
- Its necessary to understand how policy reconciles different perspectives: primary stakeholders in PG (land managers and farmers) vs citizens/consumers.

The conference continued with a presentation on the “SUPER-G farm tool - Supporting farmers to deliver “multifunctionality”, by **Frances Titterington**, from the Agri-Food and Biosciences Institute, in Northern Ireland. Her research has focussed on industry databases, and she has experience working with large datasets and multiple data streams. Through this work, she has

designed and aided in the development of online decision support tools allowing Northern Ireland beef producers to assess and benchmark their cattle's performance.



*Figure 17 - Frances Titterington presentation during Session 2b.*

### Main challenges:

- To develop an appropriate Decision Support Tool (DST) to assist farmers in improving profitability, productivity and assessing ecosystem services provision on permanent grasslands.

### Key challenges:

- Get an overview of the environmental impact and ecosystem services provided by the user's farm with two main objectives:
  - Develop a scoring system for ecosystem services;
  - Provide guidance to the user how their ecosystem service scores can be improved.
- The SUPER-G project developed a Decision Support Tool, where users enter farm information, a report is generated and the user can make informed decisions. For this DST, multiple workshops were held with experts across the consortium and with farmers, who have been very important in this journey. The co-development workshops enabled the creation of the DST, which was improved over the course of the project.
- For the DST, several indicators were selected to quantify ecosystem services on permanent grassland: Food production, wool and biomass; Biodiversity and pollination; Water quality; Flood erosion control; Landscape aesthetics; Climate regulation.

<b>Food production, wool and biomass</b>	Stocking rate of livestock	<b>Landscape aesthetics and recreation</b>	Proportion of grassland habitat under statutory nature conservation
	Nitrogen use efficiency (fertiliser)		% of buffer strips, trees, hedges
	Nitrogen use efficiency (livestock production)		Natural heritage, sacred objects
	Grass/clover dry matter (DM) productivity		Nature trails
	Forage efficiency		
<b>Climate regulation</b>	Stocking rate of ruminants	<b>Water Quality</b>	Nitrate-N concentration in surface water
	Soil organic carbon content (Dumas method)		Quantities of manure applied
	Mineral N fertiliser application rate		Number of eutrophication incidents per year
	Thickness of peat layer (m)		N input rate
	CO <sub>2</sub> equivalent emission per unit area		Livestock access to watercourses
<b>Flood erosion and control</b>	Stocking rate	<b>Biodiversity and pollination</b>	Botanical composition
	Soil structure (field interpretation)		Proportion of Natura 2000 grassland habitats (% AA)
	Evidence of rills		Earthworm numbers
	Vegetation cover / Bare soil (field)		Presence of a threatened species associated with grassland
	Total porosity		

Figure 18 - List of agri-environmental indicators for the Decision Support Tool, developed in SUPER-G project, from Frances Titterington presentation during Session 2b.

- The tool uses a Simple Additive Weighting approach:
  - Parameters within ecosystem service are ranked then given a % weighting score (*weighting*)
  - Each ecosystem service parameter is normalised to a value between 0 and 1 (*normalised score*)
  - $\sum(\text{normalised score} * \text{weighting}) = \text{ecosystem service score}$
  - The ecosystem service score will be presented to the user as a percentage (%)
- The users enter the inputs with a range of user input methods: Check box; Drop down menus; Radio buttons and Photo prompts. The tool is designed to capture most information with minimal input.
- The report generated by the DST helps farmer make decisions:
  - Overall ES score to gauge performance;
  - Benchmarking chart so compare score for each parameter to expected scores;
  - Advice offered to help farmer make informed choices.

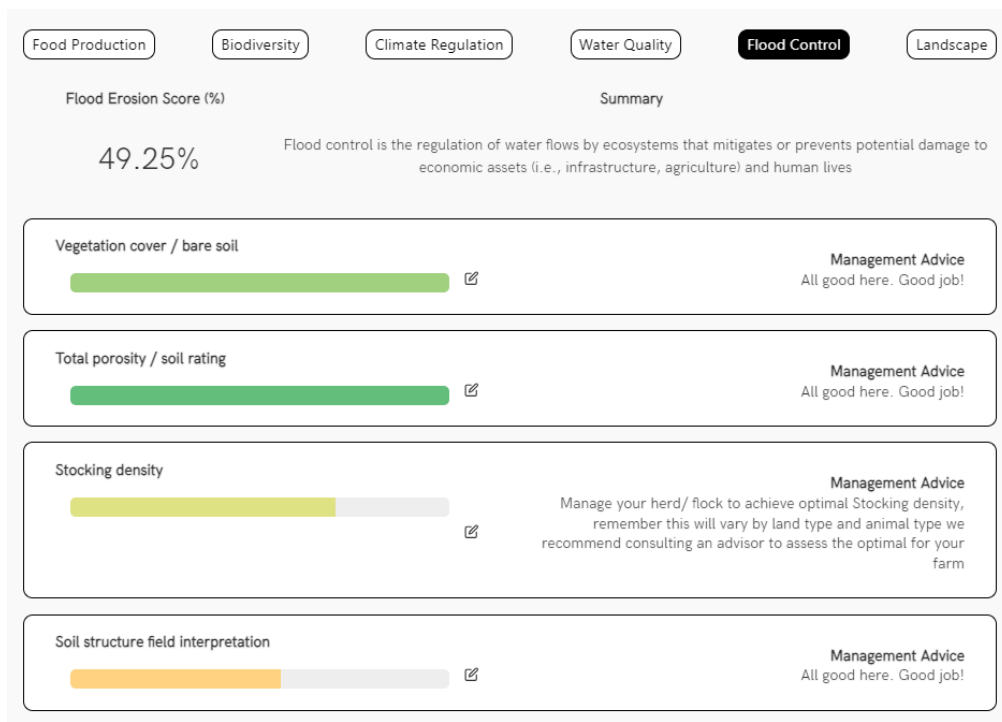


Figure 19 – Example of a report generated by the DST, developed in SUPER-G project, from Frances Titterington presentation during Session 2b.

- Headings on the report inform users of the ecosystem service they are reviewing.
- Ecosystem service scores are presented and change in real time as the user answers questions.
- Parameters are clearly labelled.
- Inputs can be easily edited to model the impact of change.
- Traffic light system:
  - Red - insufficient information;
  - Amber - can be improved and advice offered;
  - Green - user has an acceptable score/ made effort to.
- Workshops were held with expert teams to agree the advice offered.
- The advice reflects questions/ calculations for each ecosystem service.
- Tailored advice is offered to tell the user how their score can be improved.
- The impacts of management change are also highlighted, e.g. reducing N input can reduce productivity.

Key messages/Main outcomes:

- The SUPER-G project has developed a Decision Support Tool (DST) to assist farmers in improving profitability, productivity and assessing ecosystem services provision on permanent grasslands.
- The main limitations of this tool are that it is:
  - Generic rather than region specific, as it is designed to be potentially applicable to a wide geographic area (i.e. six biogeographic regions of Europe);
  - Indicative rather than diagnostic;
  - Currently only in English.
- Regarding the potential, the DST has multiple calculations which can be easily tailored and adapted to a specific geographic area. It is the only tool which covers multiple ecosystem services.
- Tool will be hosted for 24 months after the end of the project and available to all European farmers free of charge, on the SUPER-G website.

After each presentation, there was an opportunity for questions from participants in Brussels and online (in the Zoom chat).

After the key-note presentations, Dina Lopes chaired a panel discussion and Q&A session on **“What is the role of PG within European agricultural systems? What forms of innovation are needed and how can adoption be enabled?”**, with Frances Titterington, Lynn Frewer, Marija Klopčič, Mark Whittingham, Mohamed Abdalla, Paul O'Brien, and René Schills.



*Figure 20 - Panel discussion and Q&A session on "What is the role of PG within European agricultural systems? What forms of innovation are needed and how can adoption be enabled?", Session 2b.*

### Main challenges:

- Bridging the generation gap in farming presents a significant challenge.
- Farmers face challenges in choosing the right technology amidst a flood of options, needing user-friendly solutions and clarity on data ownership.

### Key challenges:

- Studies showed that only 12% of European farmers are under 40 years old. The average age of a farmer in the European Union is now over 51 years of age.
- There is a generation gap between the old farmers and younger generations that are encouraged by gadgets and technology. Technologies and innovation may be more easily adopted by younger generations, and such behaviour change aspects should be considered in the future.
- More efficient communication with farmers is needed to bridge the gap between environmental aspects and productivity aspects.
- Not all innovations and technologies are “high tech” (for example diverse species; reusing of old systems and practices, etc.).

- The rate of technological innovation in relation to agronomic practice is huge and there are so many apps and innovations available that it can be difficult for a farmer to know which one is better for his/her farm.
- One topic that was not discussed during the project, but is important to consider, was access to data and data ownership (for example, when a farmer buys a virtual fencing service, he needs to continue to pay for access to the data every year and to use the software).

**Key messages/Main outcomes:**

- Technologies should be easy to understand and to implement – user friendly.
- Advisors have an important role to play in disseminating the various forms of innovation and adapting the different types of solution to each farm and each objective. Scientific literature has shown that the use of advisors can lead to better performance.
- It's important to have a robust evidence base to support some of these innovations.
- We need long-term vision and ensure the profitability of farms.



### 3.4. Session 3 – PG Policies

After the lunch break, the conference continued with Session 3b on PG Policies, with **Nina Buchmann**, from ETH Zurich, chairing the session. Nina Buchmann is a Full Professor of Grassland Sciences at ETH Zurich, Switzerland. She contributed to the SUPER-G project with research on plant biodiversity and GHG fluxes of grasslands with the atmosphere, in response to climatic conditions and management regimes.



*Figure 21 - Session 3 - PG Policies.*

The first speaker in session 3 was **Andy Jin**, who joined us online. Andy is a Senior Lecturer in Risk Management at the Faculty of Business and Law, University of Portsmouth. He is dedicated to translating his research findings into policy recommendations and has actively participated in various transdisciplinary research and innovation projects.

Andy Jin presented on “Citizen priorities and preferences for ecosystem services”, an output from research carried out in SUPER-G Work Package 4.

#### Main challenges:

- Phase 1: To explore issues relevant to societal preferences for ES from grassland using focus groups with citizens (Qualitative)

- Phase 2: To link citizen perceptions of ES with their attitudes towards environmental policies (Quantitative)



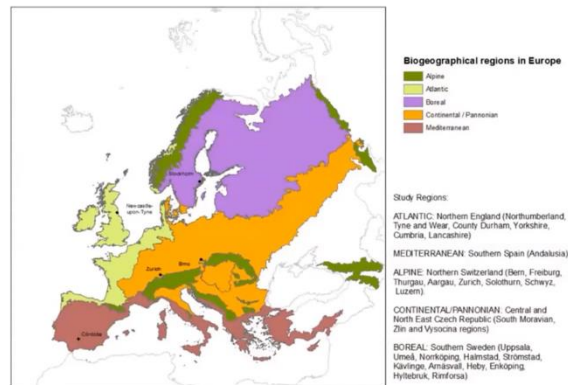
## Focus groups with citizens

### Data collection:

Fifteen focus groups with residents of rural areas, urban areas, and young adults from rural areas (aged 18–26) ( $N = 104$ ), were conducted across five European countries (Czechia, Spain, Sweden, Switzerland and the UK) between 2020 and 2021.

### Data analysis:

Transcripts were coded thematically based on the key topics covered in the focus groups



**Fig. 1.** Map of biogeographical regions of Europe included in the study and case study regions (Tindale et al., 2023)

*Figure 22 – Andy Jin presentation during Session 3.*

### Key challenges:

- Fifteen focus groups were conducted with residents of rural areas, urban areas, and young adults from rural areas (aged 18–26) ( $N = 104$ ), across five European countries (Czechia, Spain, Sweden, Switzerland and the UK) between 2020 and 2021. Transcripts were coded thematically based on the key topics covered in the focus groups.
  - Overall, participants perceived grassland landscapes positively, describing connection to the landscape through experience, emotions, environmental characteristics, activity, access, and cultural identity.
  - Fourteen ecosystem services (ES) within three categories (cultural, provisioning, and regulation and maintenance) were mentioned when participants were prompted to discuss benefits.
  - Prioritisation of ES from grassland varied between countries (Spain & Sweden: Provisioning; Czechia & Switzerland: Regulation and maintenance; UK: Cultural ES).
  - Problems and threats to grassland described by participants were classified into three themes: i) conversion of grassland to urban land use or cropland, or

reduction of access to grassland; ii) degradation of grassland; and iii) abandonment of grassland (lack of management).

- Urban groups were concerned about conversion of grassland to urban land use more often than other groups. Rural groups more frequently discussed overgrazing and pollution and identified lack of training and knowledge of land managers, and lack of profitability as drivers of conversion of grassland to other land uses.
- An online survey collected data between 1 October and 1 November 2021 from citizens in five European countries (N = 3,190): (Czechia, n = 649; Spain, n = 623; Sweden, n = 645; Switzerland, n = 641; and United Kingdom, n = 632):
  - Regulating and maintenance ES were overall valued the highest, followed by cultural and provisioning ES. Specifically, water purification, improving air quality and the beauty of nature were the three most valued ES, while raising livestock for human food was the least valued across the selected countries.
  - Spanish participants perceived highest levels of benefits associated with three categories of rural ES among the countries. Swiss participants had lowest benefit perceptions of regulating and maintenance and cultural ES, and both Swiss and UK participants had lowest benefit perceptions of provisioning ES.
  - Higher levels of threat were perceived to be associated with activities that may cause environmental degradation and socio-economic issues within agri-food supply chains compared to land use change.
  - UK participants perceived strongest threat associated with environmental degradation and land use change, while Spanish participants perceived strongest threat associated with socio-economic issues in agri-food supply chains.
  - Pro-environmental attitudes and trust in government were positively associated with support for rural environmental management across countries.

### Key messages/Main outcomes:

Policy development should consider the following topics:

- Effective communication about management strategies with citizens (enhancement of rural ES benefits and alleviation of rural threats).
- Increasing citizens' linkages of ES benefits with rural areas.



- Raising citizens' awareness of threats facing rural areas.
- Building higher social trust in government rural management.
- Building stronger pro-environmental attitudes.
- Differences between countries and socio-demographic groups.

After this session, **Richard Gooday**, from ADAS, presented the “SUPER-G Policy Tool – how does PG management intensity affect multifunctionality?”. Richard has worked for ADAS for 20 years developing and applying models of diffuse agricultural pollution, with a primary focus on quantifying the cost-effectiveness of UK government policy on water quality and GHG emissions. The Farmscoper model he developed is widely used across England by a range of organisations for assessing the impacts of farm practice and land use on the delivery of ecosystem services.



*Figure 23 - Richard Gooday presentation during Session 3.*

### Main challenges:

- A tool for use by policy makers to assess ecosystem service provision by permanent grassland (PG) for use across Europe.
- Developed a tool that allow users to see changes in service provision in a “simple way” by adjusting:
  - Extent of PG
  - Management intensity of PG
  - Farm types

### Key challenges:

- The tool calculates the fertiliser use required to produce sufficient grass given other variables and the ecosystem services provided.
- For input data, the tool uses:



- Eurostat data for 2020 (some 2010, 2016): Arable; Permanent & temporary grassland; Grazing livestock;
- NUTS2 scale, by simplified farm type: Specialist Cattle; Specialist Milk; Specialist Sheep & goats; Mixed grazing livestock; Other (arable and granivores);
- Expert opinion on arable and grassland utilisation.
- The SUPER-G policy tool covers five ecosystem services: Productivity; Climate change; Water quality; Biodiversity; Erosion. These criteria are quantified using available datasets that are aggregated by NUTS2 region. The tool, therefore, cannot spatially target change within a NUTS2 region.
- Ecosystem services – Productivity:
  - Livestock coefficients are derived from FADN data;
  - Arable coefficients are based on Eurostat cereal yield data by NUTS2;
  - Grass silage coefficients are based on predicted yield and price per tonne DM;
- Ecosystem services – Climate Change:
  - The tool uses a simplified version of the European Union GHG inventory, with:
  - Country specific implied emission factors;
  - Coefficients per LU (dairy / non-dairy) & per ha: CH<sub>4</sub> - Enteric emissions; CH<sub>4</sub> - Manure management; N<sub>2</sub>O - manure management; N<sub>2</sub>O - direct fertiliser; N<sub>2</sub>O - direct manure / urine and dung; N<sub>2</sub>O - direct crop residue.
  - EFs account for differences in management between countries (e.g. use of slurry) but can't modify management.
- Ecosystem Service - Water Quality (Nitrate):
  - The tool does not use a nitrogen balance calculation; instead using:
  - GHG Inventory FracLeach model (usually used for N<sub>2</sub>O emissions) – assuming 30% of N applied is potentially available for leaching to water: Arable fertiliser rate (Einarsson et al., 2021); Grassland fertiliser rate (tool calculation); N excretion in livestock (GHG Inventory);
  - Leaching fraction from Miterra-Europe model (Velthof et al., 2007);
  - Function of: Soil type; Effective rainfall; Denitrification (soil carbon and temperature); Land use.
- Ecosystem Service – Biodiversity:

- Species richness declines with management intensity: Arable value fixed (as fertiliser use is fixed) and Grassland value decreases as calculated fertiliser use increases;
- No difference in potential species richness between regions.
- Ecosystem Service – Erosion:
  - Uses the Revised Universal Soil Loss Equation (RUSLE) Methodology;
  - JRC Soil erosion by water (Panagos et al., 2015);
  - 100 m resolution data aggregated by NUTS2: Rainfall erosivity; Soil erodibility; Topography;
  - Cover-management (arable and permanent pasture).

#### Key messages/Main outcomes:

- The web tool was developed in Python using the Dash framework.
- The policy tool will be available on the SUPER-G website for 24 months, after the end of the project.
- The session emphasized the development of a comprehensive tool to assess ecosystem service provision by permanent grasslands (PG) across Europe, serving as a valuable resource for policymakers. This tool allows users to visualize changes in service provision by adjusting parameters such as the extent of PG, management intensity, and farm types. By incorporating various datasets including Eurostat data and expert opinions on arable and grassland utilization, the tool offers insights into critical ecosystem services such as productivity, climate change mitigation, water quality, biodiversity preservation, and erosion control. While the tool provides a simplified yet effective means to quantify ecosystem services, it also highlights challenges such as the inability to spatially target changes within regions and limitations in modifying management practices directly.

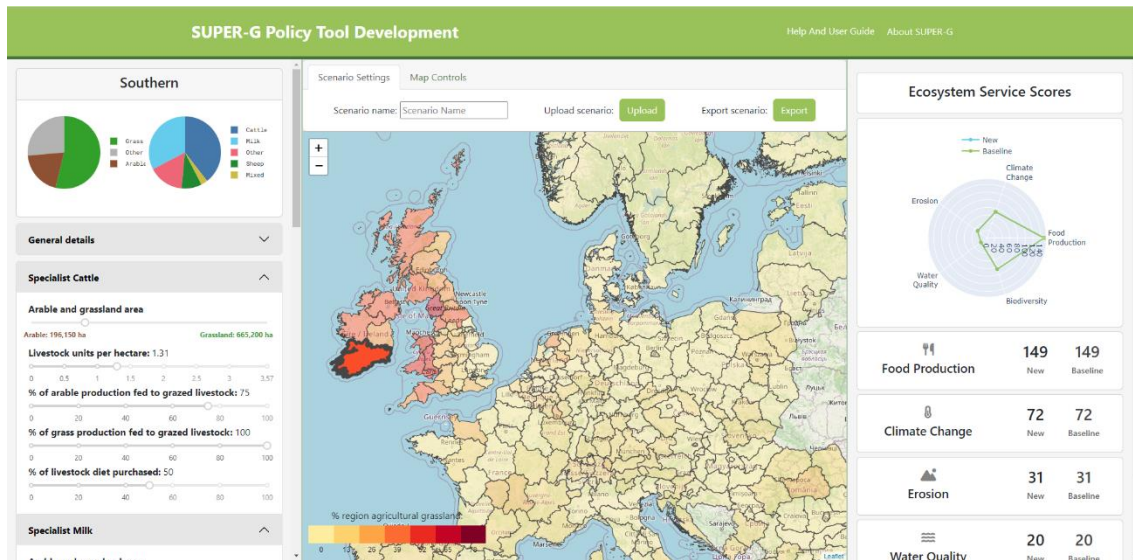


Figure 24 - SUPER-G's Policy Tool, presented by Richard Gooday, during Session 3.

The last key-note speaker of Session 3 was **Erik Hunter**, from SLU - Swedish University of Agricultural Sciences, with his presentation on “Policy Briefs & Stakeholder Workshops”, with results from the SUPER-G project. Erik’s research at SLU aims to understand why agricultural organizations are able to prosper in changing and challenging environments. In addition to research and teaching rural farm management students, he is actively involved in the Swedish Center for Agricultural Business Management, which seeks to bridge policy and practice.



Figure 25 – Erik Hunter presentation during Session 3.

### Main challenges:

- Synthesize key project findings and develop policy briefs to support sustainable permanent grassland systems and ecosystem services.

### Key challenges:

- SUPER-G project developed a set of 12 policy briefs covering stakeholder attitudes, PG management, ES delivery, typology, and trade-offs, based on:
  - 50+ articles
  - 13+ reports
  - 2 consortium workshops
  - 20 Interviews with task leaders
  - 5 Stakeholder Workshops
- The compilation of prioritized Policy Briefs and Recommendations from SUPER-G will be made available on the project website ([www.super-g.eu](http://www.super-g.eu)).

### Key messages/Main outcomes:

- 10 recommendations from policy briefs:
  - Educate citizens on the threats and benefits of PG;
  - Educate farmers on the ES that flow from PG;
  - Educate politicians on importance of PG & ES;
  - More policy levers should reward delivery of ES and target demand for ES;
  - Increase funding for smaller and traditional PG management practices;
  - Engage citizens in PG management;
  - Fund more research on the trade-offs in PG/ES and how to prioritize them;
  - Require systematic (across member states) engagement of stakeholders;
  - Ensure transparency of decision making in the formulation of member states CAP strategic plans;
  - Efforts needed to map which PGs are already degraded and do not fulfil their functions.
- 10 more controversial PG recommendations:
  - Recognize the importance of ruminants in ensuring the delivery of ES in PG;
  - Direct payments for PG management should require animal husbandry;
  - Direct payments for PG management should require quality monitoring;
  - Align permanent grassland policy with agroforestry policy;
  - PG management payments should increase with inflation;
  - More intensification is needed (in some areas);

- GAEC 1 (ban on ploughing and converting) should add revitalization to levels prior to 2018;
- Require all member states to adopt a standard typology and definition of PG;
- Target the management of predatory species;
- Require member states to specifically target PG management improvements through eco-schemes.

After the presentations, Nina Buchmann chaired a panel discussion and Q&A session on **“What does European society need from PG and how can it be delivered?”**, with Carlo Pagliacci, Lynn Frewer, Francis Lively and Eszter Lellei-Kovacs.



*Figure 26 - Panel discussion and Q&A session on “What does European society need from PG and how can it be delivered?”, Session 3.*

### Main challenges:

- Aligning the needs of farmers with political regulations is a significant challenge, particularly in maintaining permanent grasslands (PGs), evolving societal and environmental demands. This raises questions about the sufficiency of current regulations and the direction of new political guidelines for agriculture.
- Integrating diverse perspectives on the role of PGs in agricultural systems and ecosystem service delivery remains a challenge. This includes understanding societal

expectations, educating farmers on the importance of ecosystem services, and navigating the complexity of policy integration across heterogeneous European landscapes towards more results-oriented approaches.

#### Key challenges:

- Are the needs of farmers aligned with the needs of politicians? Is the current regulation sufficient to maintain PGs?
- In which direction should the new political guidelines for DG AGRI and European Parliament go and how should they do it?
- What does European society want from Agri-food systems?
- Many of the policies target the farmers but at the end farmers are not independent on what we have in the landscape, particularly when we look at climate change (e.g. How to keep the water in the landscape? How to mitigate drought effects? etc.).
- What does society want from grasslands?

#### Key messages/Main outcomes:

- When we compare what farmers needs vs the actual policies, there have been improvements during the last years in the EU CAP regulations, regarding PG and direct financial supports to livestock production.
- It's important to integrate different data streams, to look at the drivers of people's societal requirements.
- We must consider PG as a part of a broad range of agricultural systems and rewarding schemes and start to look how these integrate together to deliver the ecosystem services.
- It's important to educate and disseminate on the importance of ecosystem services. A lot of farmers have focused on production and livestock (number of animals, litres of milk, etc.), and they need to be encouraged and rewarded to also focus on the ecosystem services that they are providing.
- The intention and requirements of the society on grasslands is very interesting and studies showed that there is a strict relation between the different ecosystem services and the cultural aspects of different regions (religion, recreational, landscape aesthetics, etc.). The literature review found that the most important threat on the grassland was

land use change (abandonment and cultivation). For the ecosystem services, the main threats identified were sporting activities on protected and sensitive areas.

- Different agricultural policies should not be considered separately. The actual policies influencing PG management are still very much action-oriented rather than results-oriented. The heterogeneity within Europe may be a huge challenge to define effective policies but results-based payments may help.

### 3.5. Wrap-up session

The final conference ended with the wrap-up session, with Paul Newell Price, SUPER-G's scientific coordinator, providing the final comments and thanks to the chairs, speakers, participants and members of the SUPER-G External Advisory Panel. Paul reflected on a full day discussing the importance of permanent grasslands and their capacity to deliver multiple ecosystem services, how social science is trying to understand farmers priorities and preferences, and citizens' concerns, and the challenges of synthesising research outputs and translating them into policy recommendations. He informed delegates that the project was finalising reports, policy briefs, portraits and tools that will be available on the SUPER-G website, together with all the other communication and dissemination materials already available (e.g. factsheets, practice abstracts, webinars and videos about PG from six biogeographic regions). The Photobook, which resulted from the SUPER-G photo competition during the project, was also offered and distributed to delegates in Brussels, *representing a celebration of everything that permanent grasslands do for us through multiple ecosystem services.*



*Figure 27 – Wrap-up session of SUPER-G’s final conference, by Paul Newell-Price, the project coordinator.*

All sessions were recorded and are available on the SUPER-G YouTube channel: <https://youtu.be/BOWmYJts61E?si=1PAzvGX1G5ntU1va>

All the power point presentations are available on the SUPER-G website: <https://www.super-g.eu/final-conference/>

CONSULAI was responsible for organizing the conference and preparing all the materials – subcontracting the meeting room and meals, gathering presentations, preparing the books with factsheets that were distributed to all participants in person, designing the image of the event (including the programme), creating the link and managing the event in Brussels and online (including all the preparation sessions for online speakers).

‘Backstage’ during the event, the CONSULAI team ensured that the speakers were ready on time and monitored the Q&A in the chat, as well as coordinating the operational team. CONSULAI was also responsible for recording the final conference and editing the final video for dissemination. CONSULAI also disseminated aspects of the event on the project social media channels.

## 4. Results

The main results of the conference are summarized below.

Conference results	Activity	Impact
Presentation of SUPER-G to an international audience	Presentation by the project coordinator, Paul Newell-Price (and other WP and Task leaders)	Results and materials developed in SUPER-G have been disseminated to a wide audience
Transferring knowledge on PG in Europe	Presentation of PG in European agricultural and environmental policy by Carlo Pagliacci	Increased understanding of PG and relevant policies such as EU Regulation 2021/2115. Increased understanding of funding opportunities for R&I in future EU programs where PG may fit.
Transferring knowledge on PG in Europe	Presentation of PG and agriculture from a farmer's perspective by Paul O'Brien	Increased understanding of the critical role of PG in European agriculture and ecosystems, highlighting the necessity of protecting and supporting them through environmental, economic, and social sustainability measures, while addressing the challenges.
Transferring knowledge on PG services	Presentation of PG - Unlocking their potential for delivery of multiple ecosystem services, by René Schils	Increased understanding of unlocking the multifunctionality potential of PG across Europe by understanding their diverse ecosystem services and agricultural management challenges.
Transferring knowledge on PG services	Presentation of Permanent Grasslands and biodiversity, by Mark Whittingham	Understanding the pressing challenges facing biodiversity on PG in Europe, particularly regarding land use change and intensification.
Transferring knowledge on PG services	Presentation on Permanent Grasslands and Climate Regulation, by Mohamed Abdalla	Understanding the critical role of soil organic carbon in soil health and climate mitigation, highlighting the challenges and dynamics of carbon sequestration in European grasslands.
Transferring knowledge on PG management	Presentation on Permanent grassland management & innovation, by Marija Klopčič	Increased understanding and addressing barriers to innovation in grasslands while empowering farmers to manage for ecosystem services, highlighting the importance of comprehensive typologies and evidence-based adoption of technologies
Transferring knowledge on PG management	Presentation on Farmer priorities and Preferences for PG management, by Lynn Frewer	Understanding the importance of permanent grasslands for ecosystem services, emphasizing the need for financial incentives and policy changes to support their maintenance and improvement, while also addressing citizens' concerns and priorities regarding grassland landscapes.
Transferring knowledge on PG management	Presentation of the SUPER-G farm tool - Supporting farmers to deliver multifunctionality, by Frances Titterington	The session introduced the SUPER-G farm-level Decision Support Tool (DST) designed to aid farmers in evaluating ecosystem services provision on

Conference results	Activity	Impact
		permanent grasslands, despite limitations such as geographic coverage and language availability, it offers customizable calculations and will be accessible to European farmers for free post-project.
Sharing opinions and lessons learnt about “What is the role of PG within European agricultural systems? What forms of innovation are needed and how can adoption be enabled?”	Dina Lopes chaired a panel discussion and Q&A session, with Frances Titterington, Lynn Frewer, Marija Klopčič, Mark Whittingham, Mohamed Abdalla, Paul O'Brien and René Schils	Exchange of knowledge on the role of PG and innovations needed. The session highlighted the importance of providing farmers with accessible technology and expert guidance to choose and to implement the innovations, ensuring the sustainability and profitability of agricultural practices.
Transfer knowledge on PG policies	Presentation on Citizen priorities and preferences for ecosystem services, by Andy Jin	Increased the importance of considering citizens' perceptions and values regarding grassland landscapes and ecosystem services, emphasizing the need for effective communication, awareness-raising, and trust-building in rural environmental management policies across European countries.
Transfer knowledge on PG policies	Presentation of the SUPER-G Policy Tool, by Richard Gooday	The session emphasized the development of a comprehensive policy tool developed by SUPER-G to assess ecosystem service provision by PG across Europe, serving as a valuable resource for policymakers.
Transfer knowledge on PG policies	Presentation on Policy Briefs & Stakeholder Workshops, by Erik Hunter	Creating easy-to-understand policy briefs from project findings to help manage PG sustainably, highlighting the importance of involving stakeholders and making decisions transparent.
Sharing opinions and lessons learnt about “What does European society need from PG and how can it be delivered?”	Nina Buchmann chaired a panel discussion and Q&A session with Carlo Pagliacci, Lynn Frewer, Francis Lively and Eszter Lellei-Kovács	Exchange of knowledge on the role of PG within European society and within agri-food systems. The session addressed the current gap between political aims and farmer needs, alongside integrating diverse perspectives on the role of PG, underscoring the necessity for more effective policy integration and results-oriented approaches in European agriculture.

## 5. Conclusions and lessons learned

The final conference provided an opportunity to reach a wide audience with relevant stakeholder groups among the participants (e.g., researchers, farmers, farmer organisations, students, advisors, public authorities and policy makers, etc.). All stakeholder groups were well represented. The participation of authorities (e.g. DG-AGRI and DG-ENV) was very positive as these actors are not often well represented at such events, which tend to attract the research and technical community. The presence of authorities was particularly relevant for the project objectives since they are the competent actors to modify regulations and administrative procedures to enable the implementation of sustainable PG practices at regional and European level.

The conference aimed to deliver a multidisciplinary programme, presenting SUPER-G project results from over five years of research, collaboration, and dialogue on the sustainable management of permanent grasslands in Europe. Through a series of presentations, panel discussions and 'Q&A' sessions, the conference addressed key challenges, innovations, policy implications, and societal needs related to PG.

One of the central themes that emerged from the conference was the recognition of PG as an important provider of multiple ecosystem services (ES) while facing threats from sub-optimal management, land conversion, and abandonment. It became evident that effective management strategies must balance environmental, economic, and social sustainability to ensure the long-term viability of PG.

The conference highlighted the importance of integrating diverse perspectives, including those of farmers, policymakers, scientists, and citizens, in shaping policies and practices related to PG management. This inclusivity fosters a holistic understanding of PG's role within agricultural systems and society, facilitating the development of context-specific solutions. Furthermore, discussions emphasized the need for user-friendly technologies, robust evidence-based policy frameworks, and enhanced communication to support PG management. Initiatives such as decision support tools, policy briefs, and stakeholder workshops were identified as valuable resources for guiding decision-making and fostering knowledge exchange.

Lessons learned from the SUPER-G project final conference include the importance of:



- Collaborative approaches that engage stakeholders across sectors and disciplines.
- Prioritizing multifunctionality in PG management to deliver a range of ES.
- Integrating scientific research, policy development, and societal needs to inform decision-making.
- Empowering farmers through training, financial incentives, and access to innovative technologies.
- Recognizing the cultural, environmental, and economic value of PG and aligning policies accordingly.

Overall, the conference highlighted the impact of sustainable PG management in supporting biodiversity, climate regulation, food security, and rural livelihoods. The SUPER-G project contributes to increasing our understanding of PG ecosystems and informing policies that protect their future for generations to come.

The future of permanent grasslands (PG) lies in embracing innovation, adaptive management, and collaborative governance frameworks. As the agricultural landscape continues to evolve in response to environmental challenges and societal demands, there is a growing imperative to enhance the resilience and sustainability of PG within agricultural systems.

Moreover, the future of PG centers on encouraging synergies between conservation efforts, agricultural productivity, and rural development. By integrating nature-based solutions, agroecological principles, and agri-environmental schemes, policymakers can encourage land management practices that promote biodiversity conservation, soil health, and climate resilience.

Events such as the SUPER-G Final Conference are necessary to leverage knowledge from research results, fostering collaboration, and informing policy and practice in relevant fields:

- **Knowledge Exchange:** Conferences bring together researchers, practitioners, policymakers, and stakeholders from diverse backgrounds to share insights, experiences, and best practices. This exchange of knowledge helps disseminate the latest research findings, innovations, and technologies, facilitating learning and capacity-building within the community.



- **Networking Opportunities:** Conferences provide valuable networking opportunities for participants to establish connections, build relationships, and foster collaborations. These interactions can lead to interdisciplinary partnerships, joint research projects, and collective action initiatives aimed at addressing complex challenges.
- **Policy Impact:** By joining experts and stakeholders, conferences create a platform for discussing pressing issues, identifying gaps in knowledge, and formulating evidence-based policy recommendations. The insights generated during these discussions can inform policy development, implementation, and evaluation processes at local, national, and international levels.
- **Dissemination of Research:** Conferences offer researchers a platform to present their findings, receive feedback, and disseminate their work to a broader audience. This dissemination of research contributes to the advancement of scientific knowledge, enhances visibility and recognition within the academic community, and promotes the uptake of research findings in practice.
- **Capacity Building:** Conferences often feature discussion sessions, and skill-building activities aimed at enhancing the professional development of participants. These capacity-building opportunities help attendees acquire new skills, stay abreast of emerging trends, and develop innovative solutions to complex challenges in their respective fields.

In summary, events like the SUPER-G final conference serve as promoters for collaboration, innovation, and positive change by facilitating knowledge exchange, networking, policy impact, research dissemination, capacity building, and inspiration within the academic, scientific, and practitioner communities.

The organisation of the final conference was a success, but there are some lessons learned from the final conference event that we would like to mention:

- The conference in the form of a hybrid event can be challenging. Being in person and online, although it is "easier" to reach a wider audience from all over the world, it is more difficult to capture the audience's attention during the entire duration of the conference of the online participants. Therefore, we tried to create a dynamic

programme with excellent experts, using an appealing platform and we interacted with the public online via chat and sound.

- Despite being very interesting and with excellent speakers, the conference programme was quite dense, and, for the online participants, we had little space/time for the participants to speak.
- We could for example have used collaborative platforms for attendees' participation such as Miro, Mural or Klaxon. However, for such a large audience, this could become unfeasible. In any case, we promoted active participation through the chat, as described above.
- Disadvantages of hosting the event online are the lack of face-to-face time to network in a relaxed environment for online delegates. Nevertheless, some pertinent questions were answered in real time by the hosts or the key-note speakers,, and during the panel sessions.
- We received very good feedback from the participants in person and through the chat function from online participants. We also received a lot of congratulatory emails and a good reaction on social media channels.



## 6. ANNEXES

### Annex I: Conference Dissemination

#### Conference dissemination – before the event

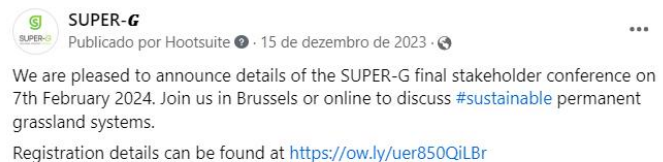
For the dissemination of the SUPER-G Final Conference, the following communication strategy was developed to get the largest number of participants which consisted of five main actions:

1. Social media and website campaign.
2. Regional dissemination.
3. Email invitation.
4. Newsletter dissemination.
5. Dissemination through universities, research institutes and European institutions

#### 1. SOCIAL MEDIA CAMPAIGN

The conference was disseminated on the project website and the SUPER-G social media channels: Facebook, Instagram, LinkedIn and Twitter (X). The campaign was launched on the 15<sup>th</sup> of December when the conference was announced. From this day on, several posts were published, gradually discovering the details of the conference.

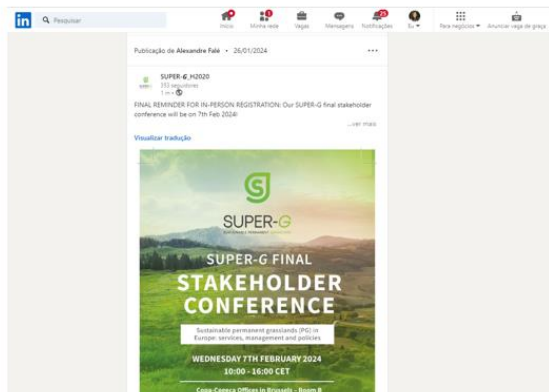
#### Facebook














## Instagram



## LinkedIn



## Twitter

-  X
-  Página Inicial
-  Explorar
-  Notificações
-  Mensagens
-  Listas
-  Itens salvos
-  Comunidades
-  Premium
-  Perfil
-  Mais

Postar

←

**H2020SUPER-G**

429 posts

Seguindo



Outwintering at Oakwood Mill - Selkirk | Events help! Please use the above map for an exact meeting location at Hartwoodmyers Hill. Come and see first...




 51



---

 H2020SUPER-G @H2020SuperG · 26 de jan
⋮

**FINAL REMINDER FOR IN-PERSON REGISTRATION:** Our SUPER-G final stakeholder conference will be on 7th Feb 2024!

Join us in Brussels or online to discuss [#sustainable](#) permanent grassland systems. 🌱🌿

Don't miss this opportunity and register today:  
[ow.ly/uwr850QILBr](https://ow.ly/uwr850QILBr).




 2
 3
 111



## Website









**SUPER-G**  
SUSTAINABLE PERMANENT GRASSLAND

[ABOUT US](#)
[EVENTS](#)
[COMMUNICATION](#)
[FARM NETWORKS](#)
[EXPERIMENTAL SITES](#)
[DELIVERABLES](#)
[CONTACT US](#)



**SUPER-G**  
SUSTAINABLE PERMANENT GRASSLAND

## Final Hybrid Conference

7th February 2024

◀
◉ ◉ ◉ ◉ ◉
▶



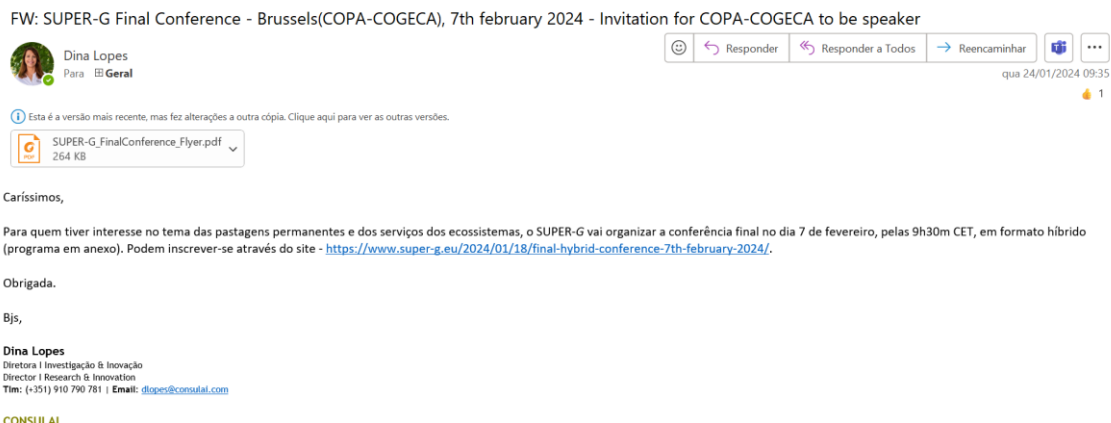
## 2. REGIONAL DISSEMINATION

To encourage people from the target regions to register for the conference, the project partners were involved in the dissemination strategy of the conference. For this, a banner was published on the website with all the details of the event and partners disseminated the conference on their own channels.



## 3. EMAIL INVITATION

All the partners were invited to directly email their lists of contacts in the sector, to researchers, policy makers, farmers, industry, and civil society. Contacts with the European policy departments were also included.



SUPER-G - Happy New Year!

PN Paul Newell-Price <Paul.Newell-Price@adas.co.uk>  
 Para ag1gicj; aline.lebihan; A.Vaishar; Aurelie.Aubry; bmarkovic; nina.buchmann@usys.ethz.ch; Caroline Rhymer; Catherine BAUSSON; Sjaak Conijn; Bufo, Conny; David.Patterson; Dina Lopes; dradonjic; Erik Hunter; eszendrak; eva.lieberherr; Filippo Milazzo; Lively, Francis; gabriele.mack; **Mais 70 pessoas** sex 05/01/2024 15:00

Se existirem problemas com a forma como esta mensagem é apresentada, clique aqui para vê-la num browser.

SUPER-G\_FinalConference\_Flyer.pdf 264 KB

Good afternoon everyone and Happy New Year!

This is just a gentle reminder to those who are planning to join the SUPER-G final stakeholder conference (programme attached) to register via the following link: [Sustainable Permanent Grasslands \(PG\) in Europe: services, management and policies | Final hybrid conference | 7th February 2024 \(google.com\)](#)

Please spread the word and if you can join the event please sign up today! On the registration page, you will need to select whether you'll be joining online or in person.

Also, please send me any suggestions for early career people to contribute a 20-minute talk to the second session of our final project meeting on Thursday 8<sup>th</sup> February, which will start at 09:30 am CET and will be finished by 13:30 (in Brussels and online). We'll send out a draft programme soon, but the focus will be on sharing project outputs and discussing future opportunities.

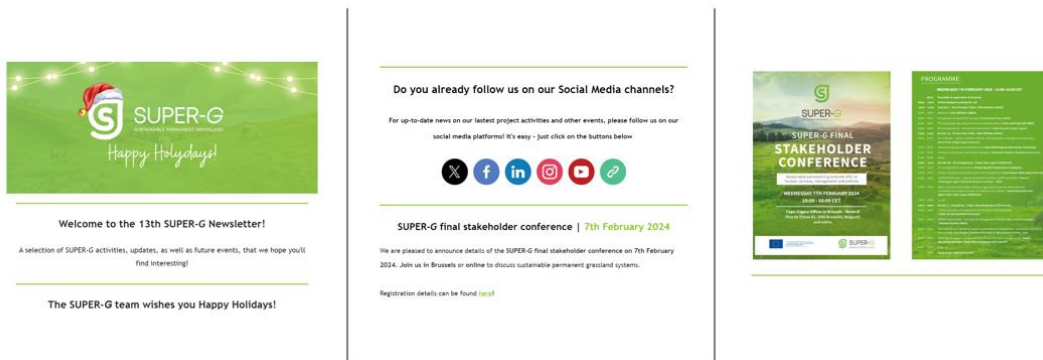
Please register for the final project meeting here: [SUPER-G Final Project Meeting | 8th February 2024 \(google.com\)](#)  
 Again, please select whether you'll be joining online or in person.

Best wishes,  
 Paul



Dr Paul Newell Price  
 Associate Director  
 ADAS Sustainable Agricultural Systems - Soils & Nutrients

#### 4. NEWSLETTER DISSEMINATION

The SUPER-G Final Conference was also disseminated via Mailchimp, with two newsletters, the first sent on 22<sup>nd</sup> December 2023.



December, 2023 (1)

  **SUPER-G | #13 NEWSLETTER**  
 Normal · Super-G Newsletter Visualizar Relatório ▾

Enviado em sex, Dezembro 22nd, 2023 8:40 da manhã para 585 destinatários por you.

Editado em sex, Dezembro 22nd, 2023 8:40 da manhã por you

Enviado Classic Builder

40.5% Aberturas      7.8% Cliques

And the second on 23rd January 2024.



**SUPER-G final stakeholder conference | 7th February 2024**

The SUPER-G final Stakeholder Conference is coming up, and it's on 7 February 2024. Join us in Brussels or online to discuss sustainable permanent grassland systems.

Registration details can be found [here!](#)



January, 2024 (1)

**SUPER-G | Final Stakeholder Conference | 7th Feb**

**9:30-16:00 CET**

Normal · Super-G Newsletter

Visualizar Relatório

Enviado em **ter, Janeiro 23rd 9:31 da manhã** para 583 destinatários por you.

Editado em **ter, Janeiro 23rd 9:31 da manhã** por you

Enviado

Classic Builder

**36.7%**

Aberturas

**7.0%**

Cliques

## 5. DISSEMINATION THROUGH RESEARCH CENTERS, UNIVERSITIES AND EUROPEAN INSTITUTIONS

Several contacts were made with Universities, Research Institutes and European Institutions, to encourage dissemination of the event via their own channels.



## Conference dissemination – after the event

After the event all the participants were contacted and received the link with the recording and presentations that were displayed during the day. Also, these contents will be made available on the SUPER-G website and will be uploaded on the EU-FarmBook platform to ensure continued exploitation of results.

### SUPER-G Final Conference - Recording and Presentations



Dina Lopes  
Para

Bcc: [Dina Lopes](#); [Alexandre Falé](#); [nina.buchmann@usys.ethz.ch](#); [lynn.frewer@newcastle.ac.uk](#); [hejduk@mendelu.cz](#); [damien.godfroy@vosges.chambagri.fr](#); [mark.whittingham@ndc.ac.uk](#); [ambiente@adpm.pt](#); [moty@mendelu.cz](#); [falmeida@ipcb.pt](#); [vasco@nutriprado.com](#); [victor.carvalho@linovt.com](#); **Mais 133 pessoas**

Esta é a versão mais recente, mas fez alterações a outra cópia. Clique aqui para ver as outras versões.



qua 21/02/2024 11:57

Dear SUPER-G Final Conference Participants,

First, we would like to thank you all for attending our SUPER-G Final Conference, and for actively participate in the panel's discussion about Permanent Grasslands in Europe.

Please find the link for the live recording here <https://www.youtube.com/watch?v=BOWmYJts61E> and for the presentations here - <https://we.tl/t-yGGmpba882>, and feel free to share these with colleagues or other people that could be interested in this topic.

Now that we are nearly ending the project all the SUPER-G Team would like to invite you to check all the materials produced and events organized in our website – <https://www.super-g.eu/> and Social media channels, in order to spread the word about the importance of Permanent Grasslands in Europe and in the world!

On behalf of the SUPER-G Team,

Dina Lopes  
Diretora | Investigação & Inovação  
Divisão | Research & Innovation  
Tm: (+351) 213 629 932  
E-mail: [dlopes@corisat.pt](mailto:dlopes@corisat.pt)

CONSULAI  
Lisboa  
Rua de Junqueira, 61 G | 1300-342 LISBOA - PORTUGAL  
Tm: (+351) 213 629 932  
Beja  
Rua Manuel António Serra, nº 2, 1.º E - 800 344 BEJA - PORTUGAL  
Tm: (+351) 284 082 244  
[www.consulai.com](http://www.consulai.com) | [www.facebook.com/consulai](https://www.facebook.com/consulai)  
Think green - keep it on the screen!

