



Grant Agreement 823805 MAIL H2020 MSCA RISE 2018

# H2020 MSCA RISE MAIL Project



This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 823805

Petros Patias, Charalampos Georgiadis, AUTH



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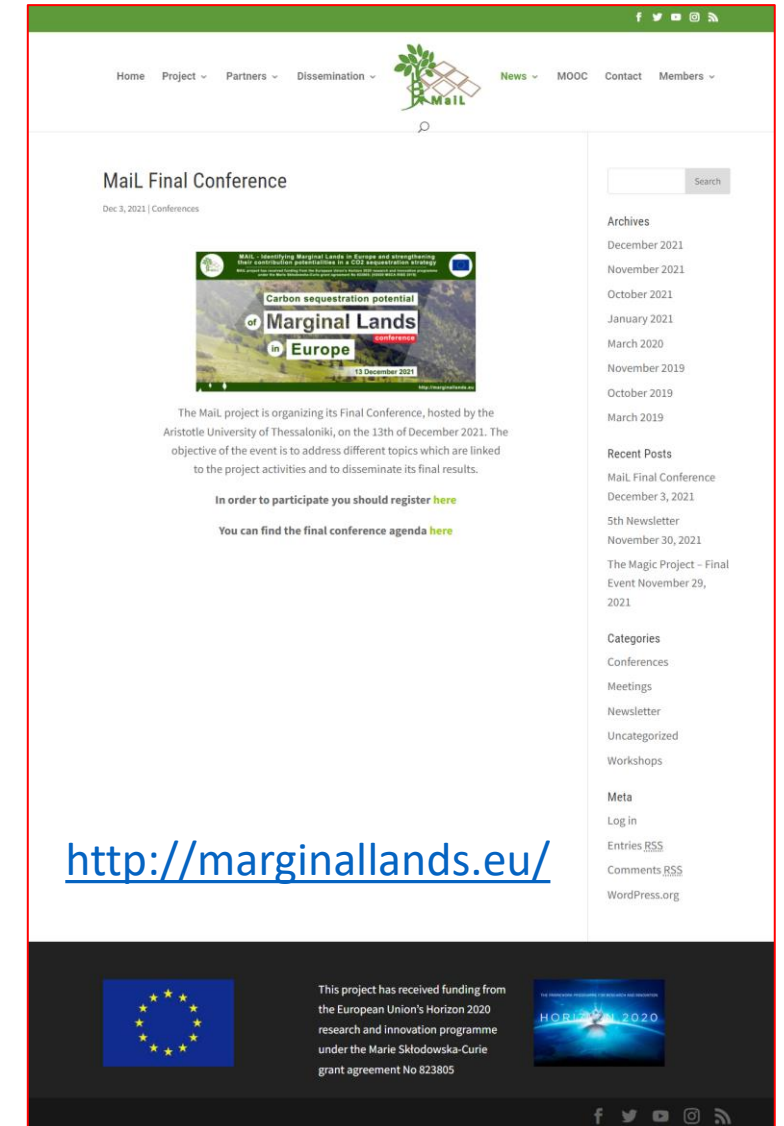


Carbon sequestration potential of Marginal Lands in Europe, MAIL conference 13 December 2021, Teleconference



# MAIL Overview

- Topic: MSCA-RISE-2018 Marie Skłodowska – Curie Research and Innovation Staff Exchange
- Identifying Marginal Lands in Europe and strengthening their contribution potentialities in a CO<sub>2</sub> sequestration strategy
- Project Duration: 36 months
- Official start of the project: 01/01/2019
- Total budget: 800,400.00 €
- EU funding: 800,400.00 €



<http://marginallands.eu/>



# MAIL Overview



THE ARISTOTLE UNIVERSITY OF THESSALONIKI (AUTH), GR (**Coordinator**)



GOUNARIS N. – KONTOS K. OE (HOMEOTECH), GR



UNIVERSITAT POLITECNICA DE VALENCIA (UPV), SPAIN



INDUSTRIEANLAGEN BETRIEBSGESELLSCHAFT MBH (IABG), GERMANY



CENTRUM BADAN KOSMICZNYCH POLSKIEJ AKADEMII NAUK (SRC PAS), POLAND



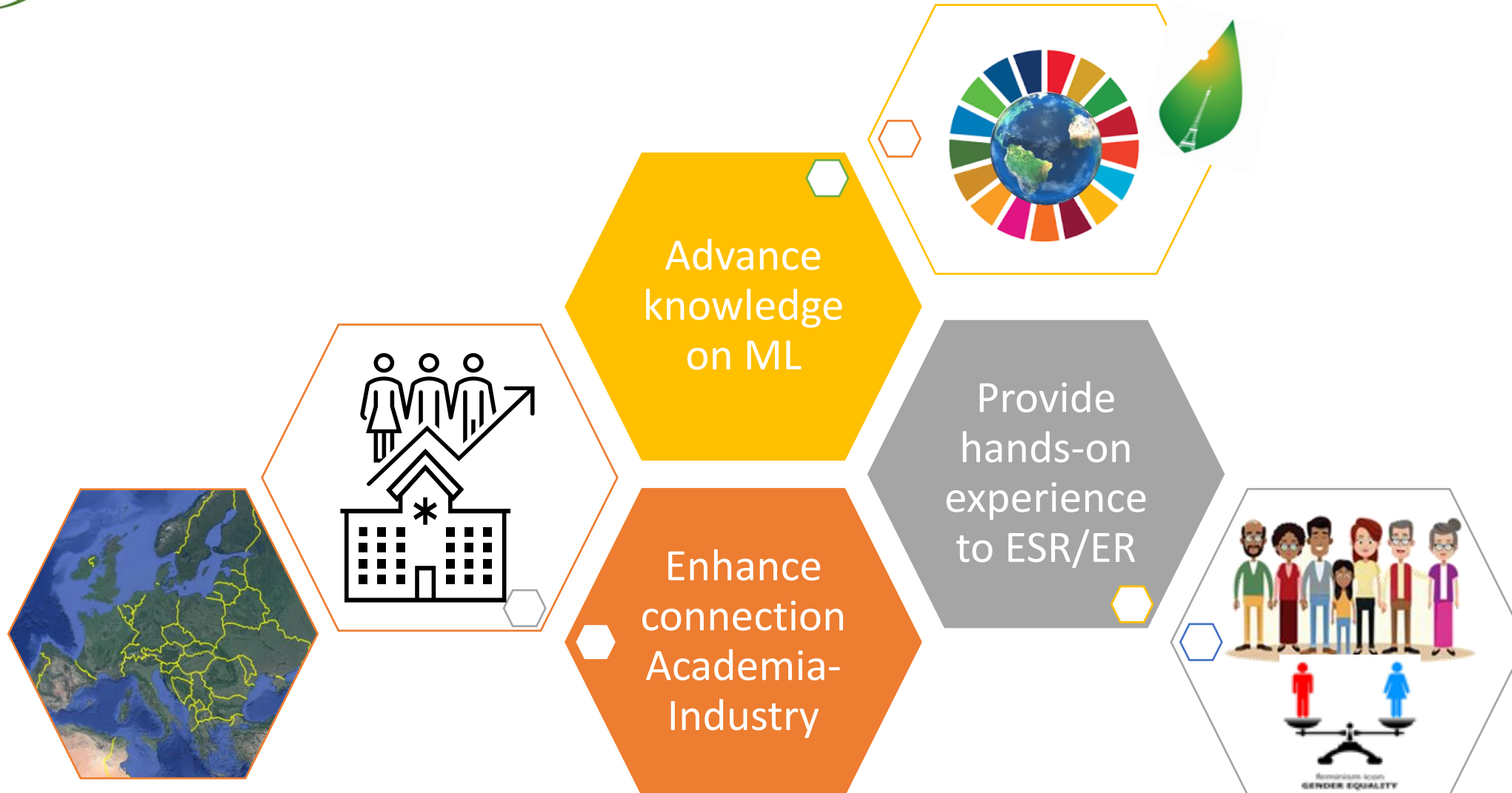
FUNDACION CENTRO DE SERVICIOS Y PROMOCION FORESTAL Y DE SU INDUSTRIA DE CASTILLA Y LEON (CESEFOR), SPAIN



# Project Goals



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# Then Pandemia comes



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Faced with extraordinary external restrictions/challenges:

➤ **Travelling**

- ❖ Travel bans
- ❖ Varying quarantine restrictions among countries – covid affected level
- ❖ Skepticism - Health risks (national public health systems/quality/expenses/contamination level)

➤ **Working - Co-operating**

- ❖ Reduced personnel accessibility
- ❖ Social distancing
- ❖ On-site/tele-coworking – extension of deliverables deadlines

➤ **Financing - Risks**

- ❖ Internal loans – own costs cover
- ❖ Canceled travel expenses – Daedalic reimbursement procedures
- ❖ Increased costs for travel/housing - availability

➤ **Managing - Risks**

- ❖ Unclear/inflexible/not adapted regulatory framework
- ❖ EC willingness to help not translated to adapted rules - Case-by-case examination! – All risks at our place
- ❖ Under normal conditions – 50%(?) projects do not reach full goals – Now under pandemia?
- ❖ Enormous management burden





# Fulfillment of Goals under pandemic

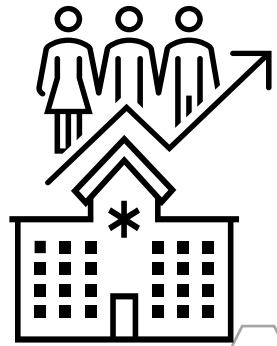


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- Seriously considered to stop the project
- Finally decided to give the battle
- Took all the risks
- Took all the precautions
- How many projects achieved it?



**174 PMs(100%)**



Advance  
knowledge  
on ML



**24 Deliverables(100%)**

**No time extension (100%)**

Provide  
hands-on  
experience  
to ESR/ER

**37 Secondees (100%)**

**(~5 PMs/secondee)**

**84% ESR / 16% ER**

Enhance  
connection  
Academia-  
Industry



Gender balance

**38% females**

**62% males**



feminism icon  
GENDER EQUALITY





# Project Objectives

Definition of parameters describing Marginal lands

Selection of proper base maps

Implementation of data processing workflows to determine the best way to map/monitor m/sm MLs

Quantification of potential CO<sub>2</sub> sequestration capacity and sustainable utilization of MLs under the prism of LULUCF

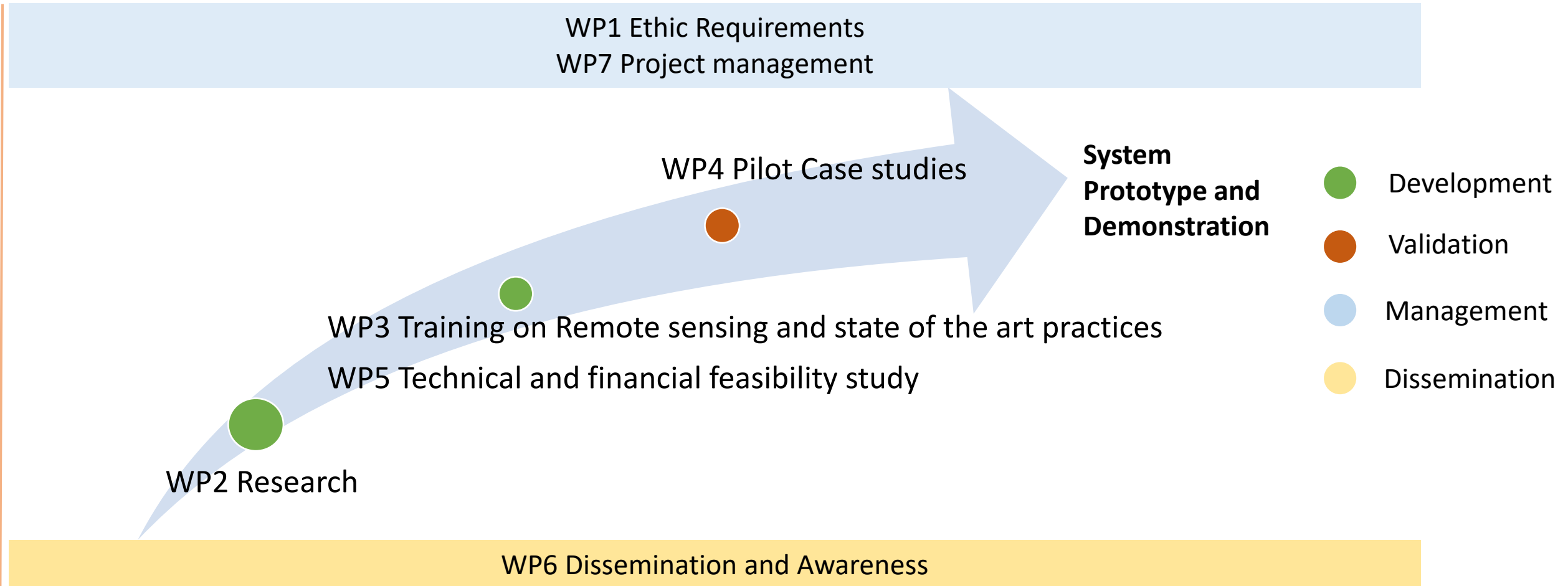
Alternative proposals of possible vegetation species that might be used for CO<sub>2</sub> storage on MLs

Creation of a knowledge base and a virtual web classroom for training

Establishment of a permanent working team consisting of RS and Forestry experts focusing on MLs management



# Project Work plan







# Work Packages

Work Package	Lead	Secondments PM
WP1 Ethics requirements	AUTH	0
WP2 Research	AUTH	82
WP3 Training on Remote sensing and state of the art practices	UPV	19
WP 4 Pilot case studies	CESEFOR	38
WP 5 Technical and financial feasibility study	IABG	35
WP 6 Dissemination and awareness	SRC PAS	0
WP 7 Project Management	AUTH	0
<b>SUM</b>		<b>174</b>

Participant	Secondments PM
AUTH	36
HOMEOTECH	32
UPV	24
IABG	32
SRC PAS	21
CESEFOR	29
<b>SUM</b>	<b>174</b>



# Work Packages (WP2)

## Preparation

Task 2.1 Literature review on Marginal Land definition

Task 2.2 Collection of appropriate existing European/Global datasets

## Development (Carbon sequestration biomass estimation)

Task 2.5 Existing models (IPCC, etc.) customization - evaluation - validation, considering local aspects

Task 2.6 Estimation of biomass volume at low productivity m/sm MLs

Task 2.7 m/sm MLs classification in Carbon sequestration capacity groups

## Development Evaluation (MLs detection)

Task 2.3 Methodology development of m/sm MLs detection

Task 2.4 Accuracy assessment of m/sm MLs detection

Task 2.8 Augment precision of MLs detection

## Development (Web page, Web tools)

Task 2.9 Web application for MLs' management

Task 2.10 Webpage and virtual classroom (for the MOOC)



# Work Packages (WP3)

Task 3.1 Preparation of a Massive Online Open Course (MOOC) for the use of advanced techniques in MLs' mapping/monitoring

Task 3.2 Seminar-workshop organization through MOOC

Task 3.3 Participate in international scientific events

Task 3.4 Accompanying Software systems



# Work Packages (WP4)

Task 4.1 Pilot case study 1: Use of open-source platform and free satellite data to map and monitor MLs

Task 4.2 Pilot case study 2: Quantification of carbon sequestration capacity in m/sm MLs

Task 4.3 Pilot case study 3: Estimation of carbon stock in forest products

Task 4.4 Pilot case study 4: Change detection and mapping in forest MLs



# Work Packages (WP5)

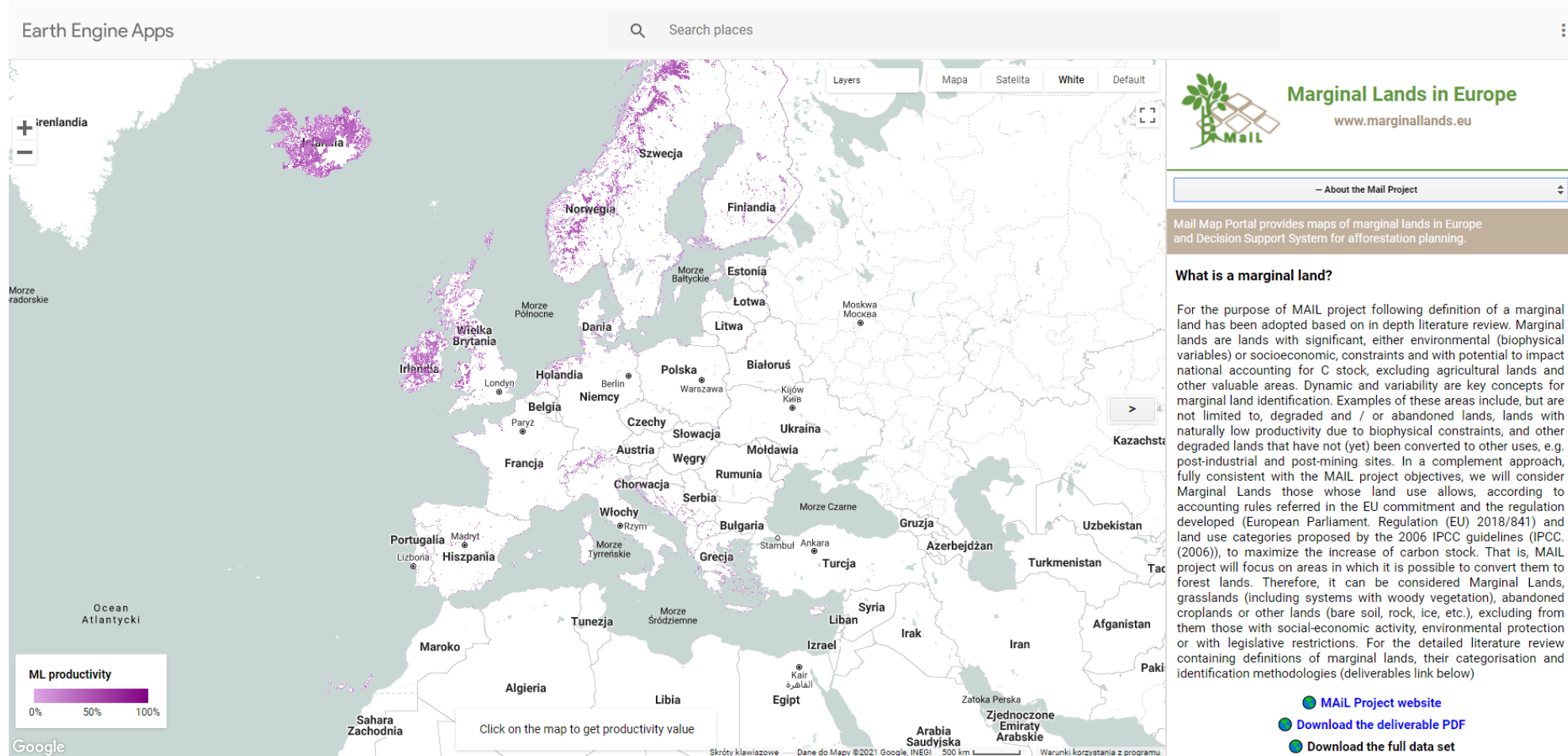
Task 5.1 Best practices MLs monitoring using remote sensing techniques

Task 5.2 Financial social and technical aspects of the sustainable development of MLs

Task 5.3 Potentialities of emerging stock exchange markets for carbon transactions and proposed policies

Task 5.4 Success stories

# Achievements (Map Portal)

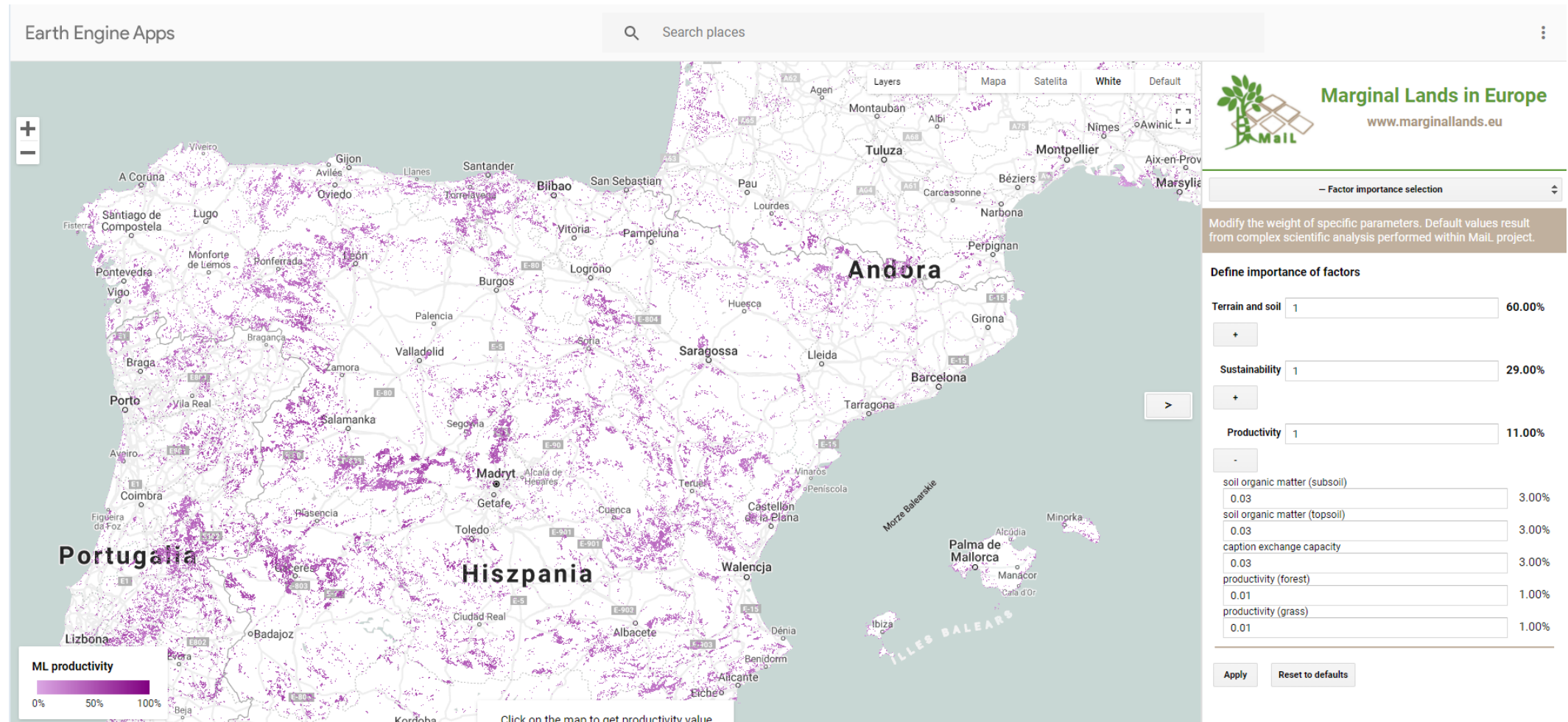






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# Achievements (Map Portal)



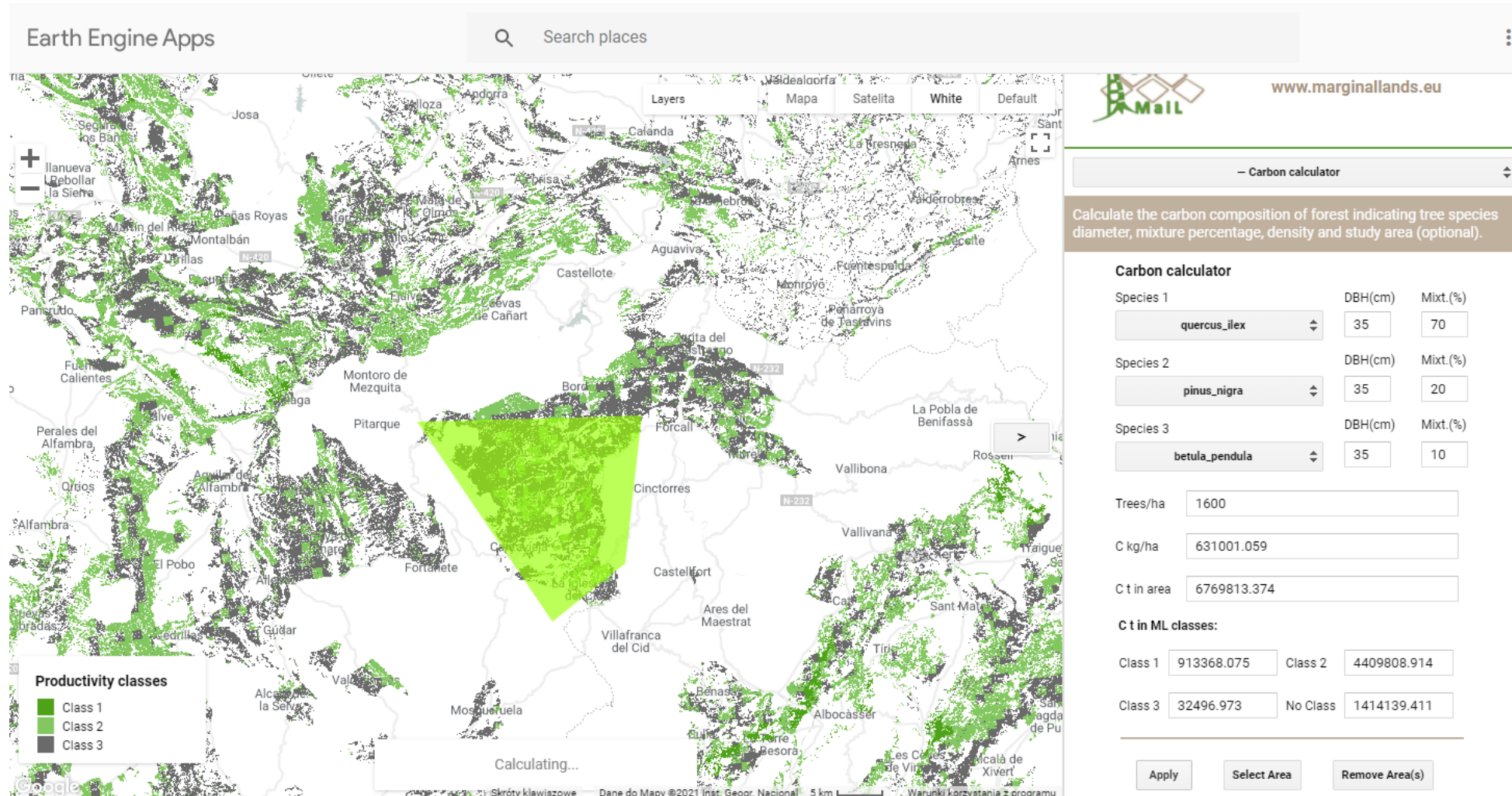
Carbon sequestration potential of Marginal Lands in Europe, MAIL conference 13 December 2021, Teleconference





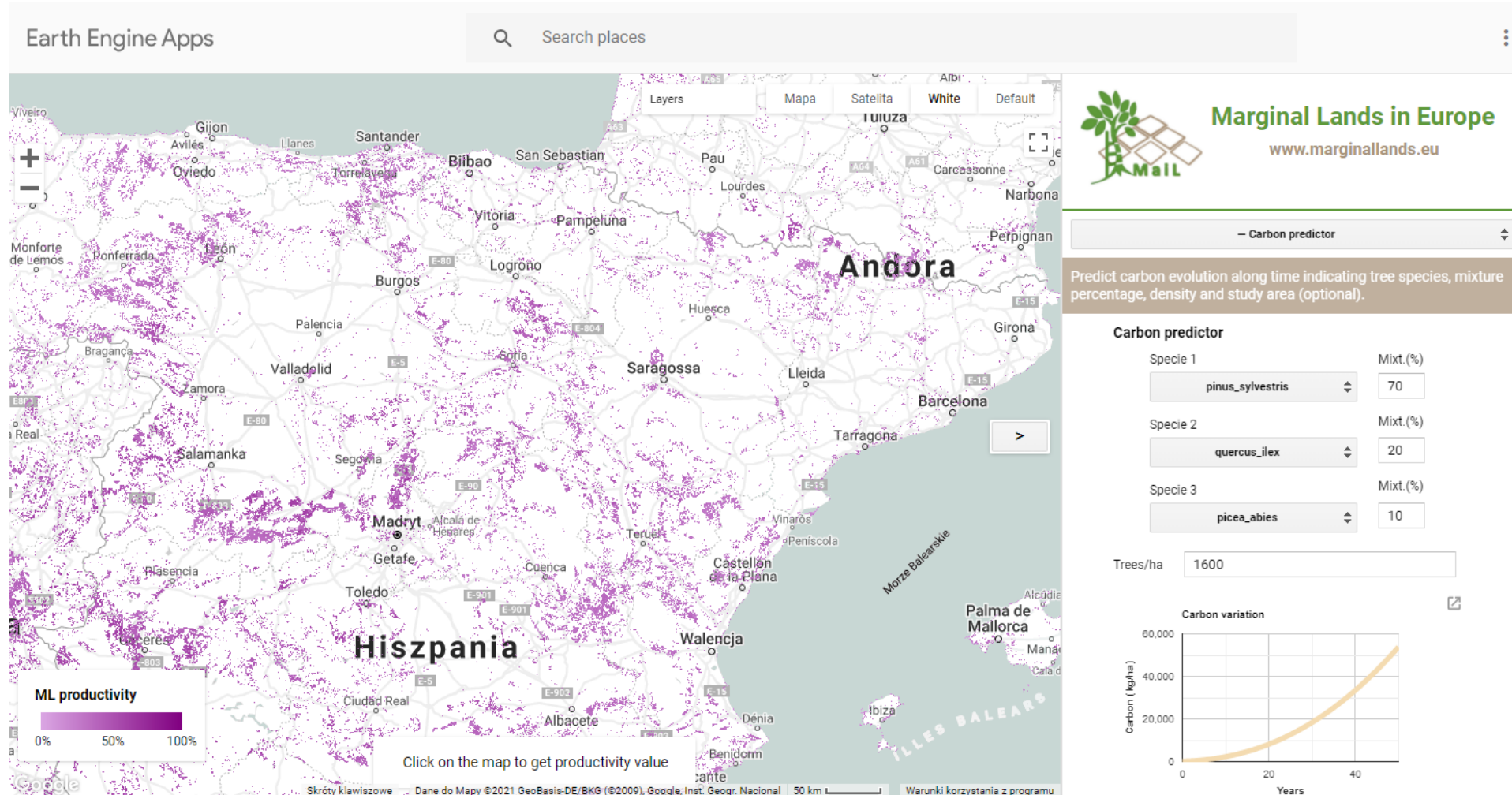
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# Achievements (Map Portal)



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# Achievements (Map Portal)







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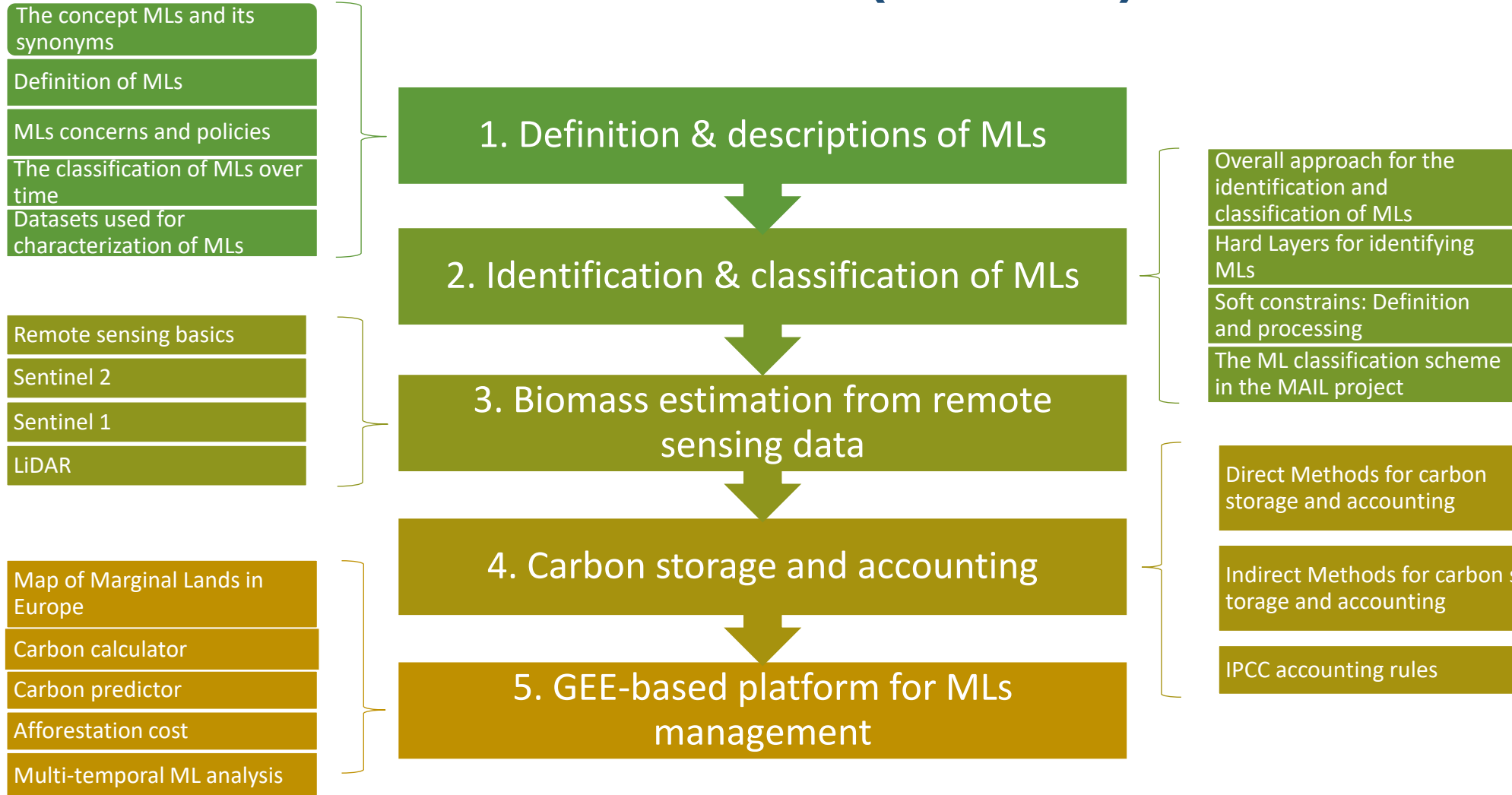
# Achievements (MOOC)



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# Achievements (MOOC)

## Structure



# Achievements (Secondments, Secondees)

## Researcher Gender Participation



**38 %**  
Female



**62 %**  
Male

## Secondee Status



**84 %**  
Early-Stage  
Researchers

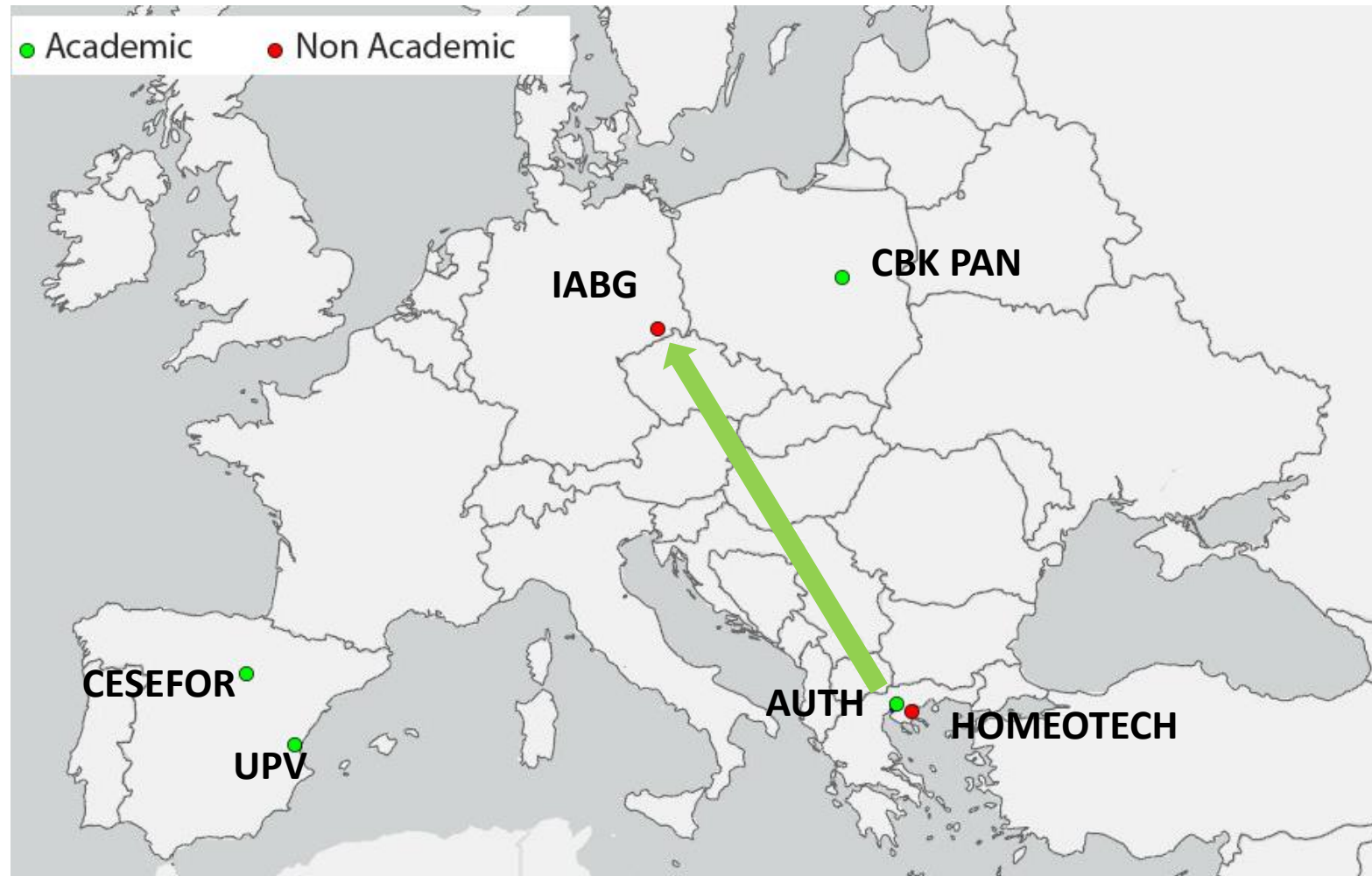


**16 %**  
Experienced  
Researchers

**37** Secondees, implementing **47** secondments (average ca. **5** PMs/secondee)

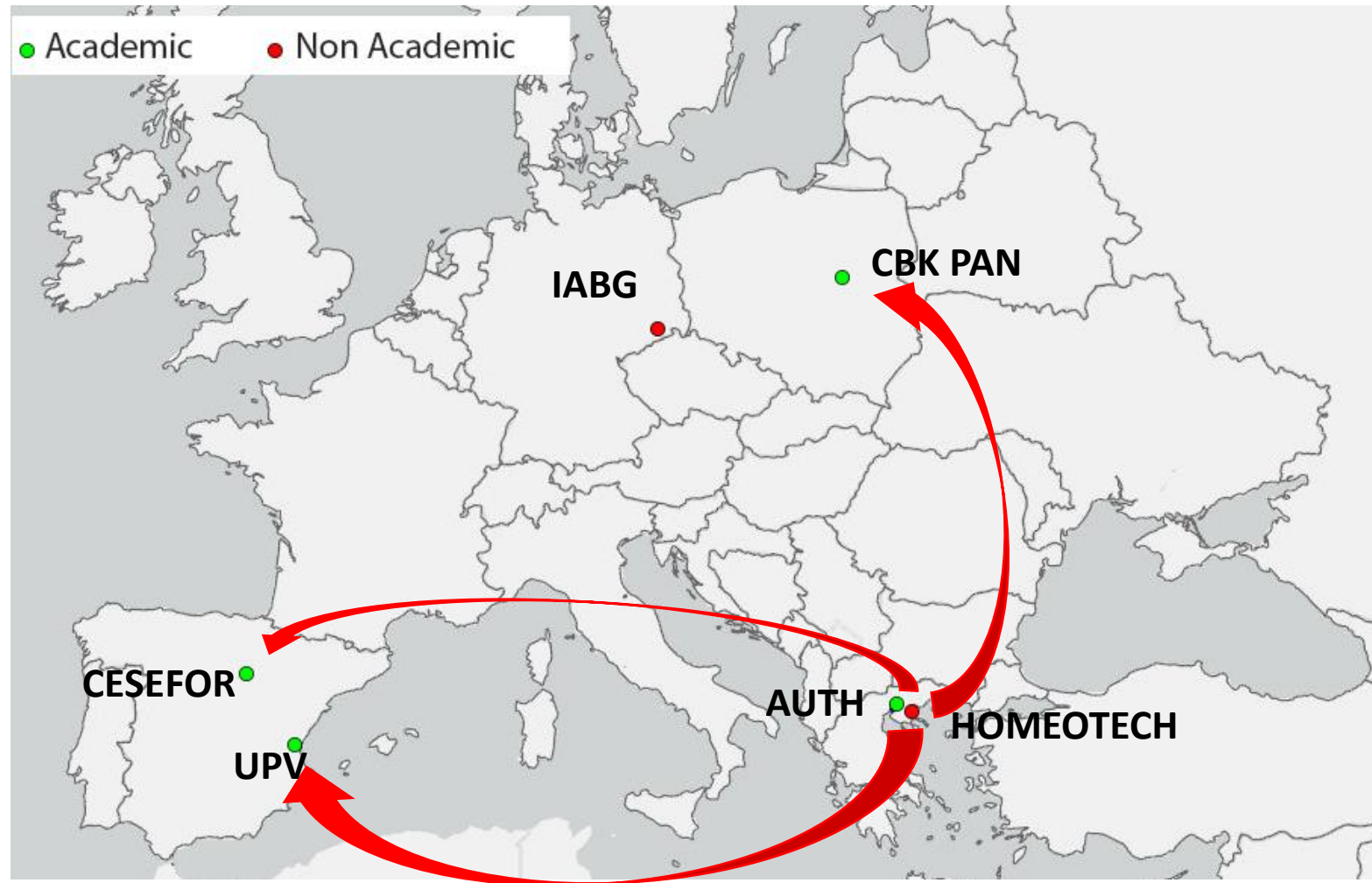


# Secondments (AUTH)



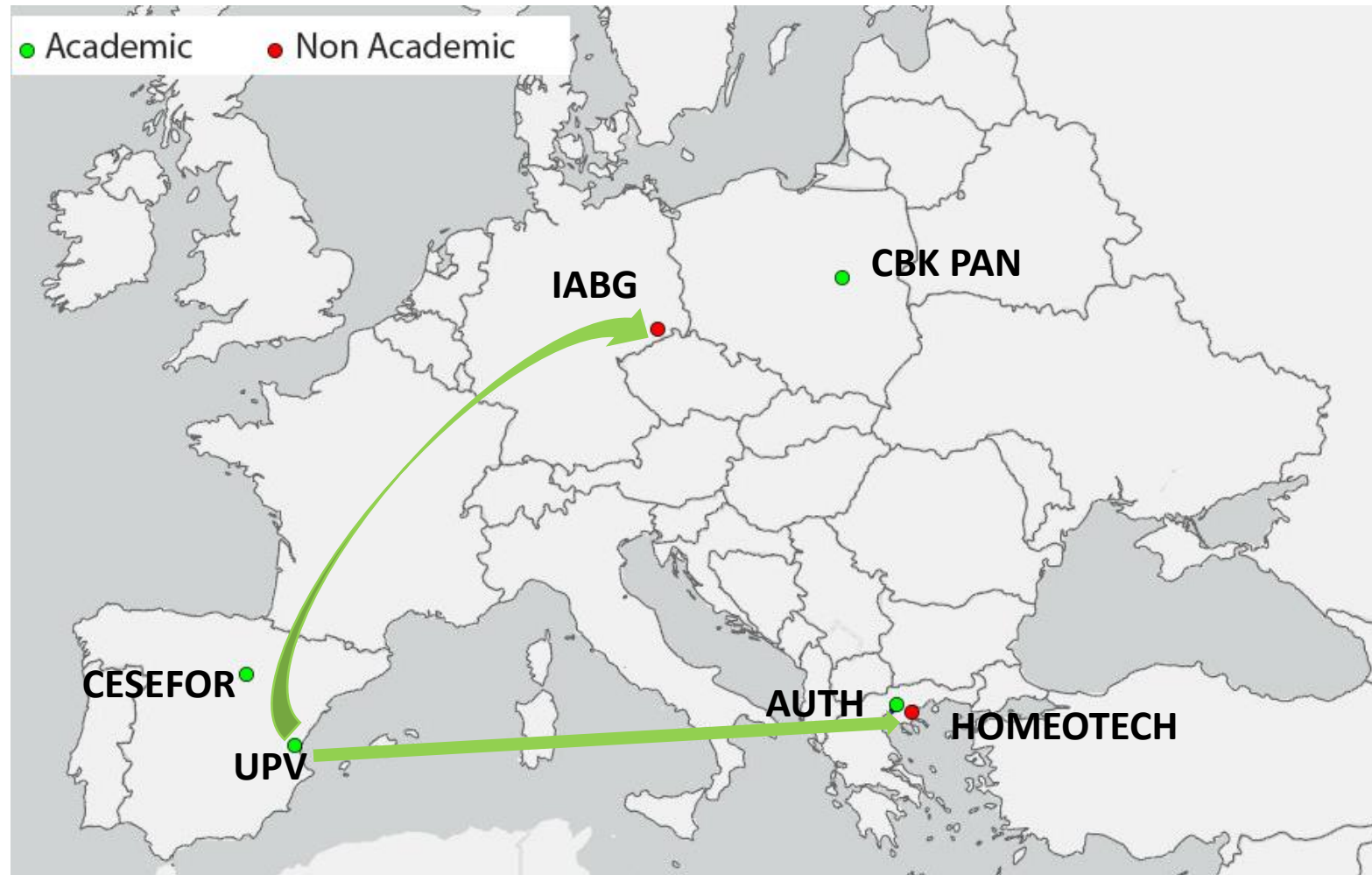


## Secondments (HOMEOTECH)

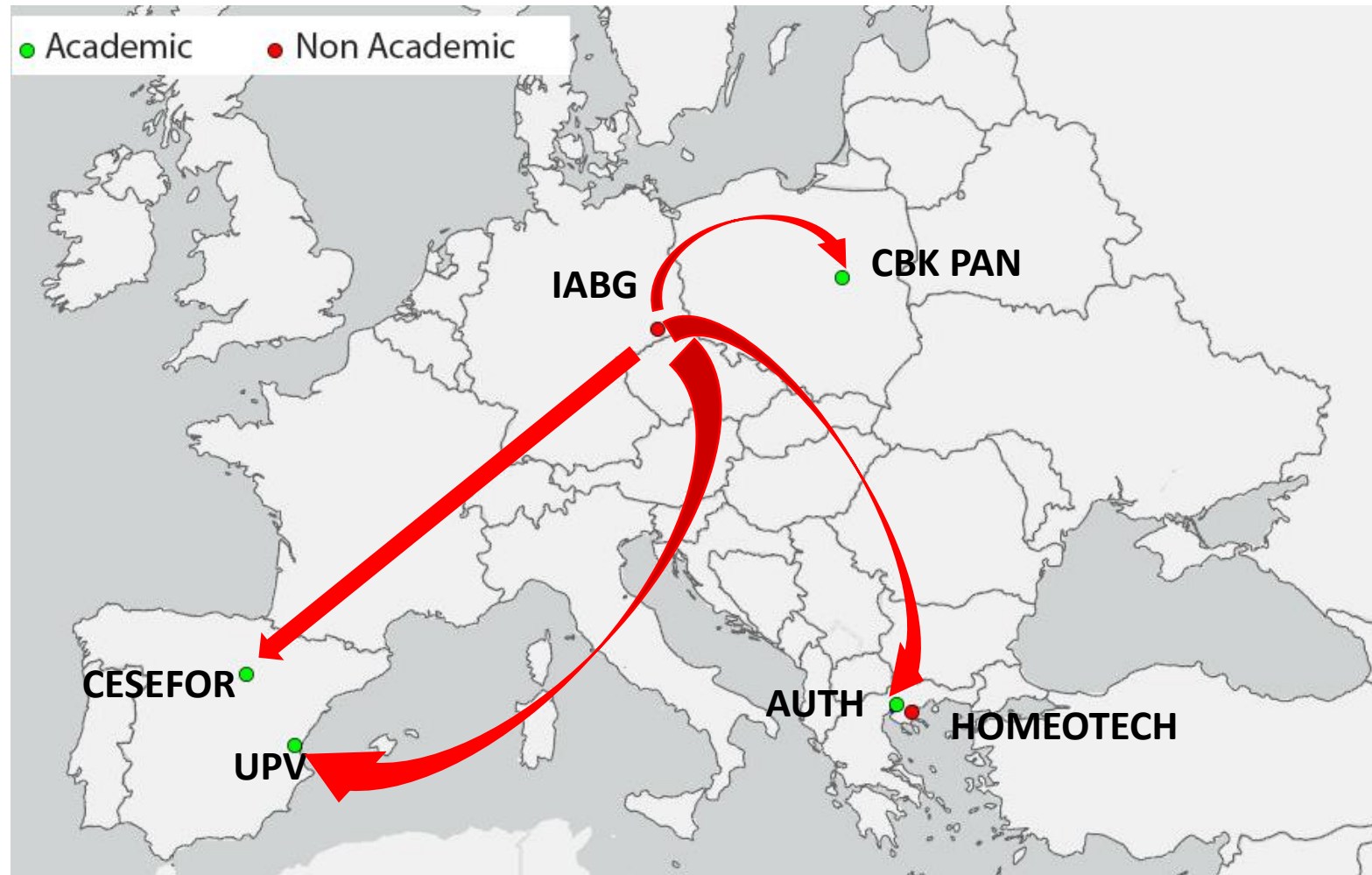




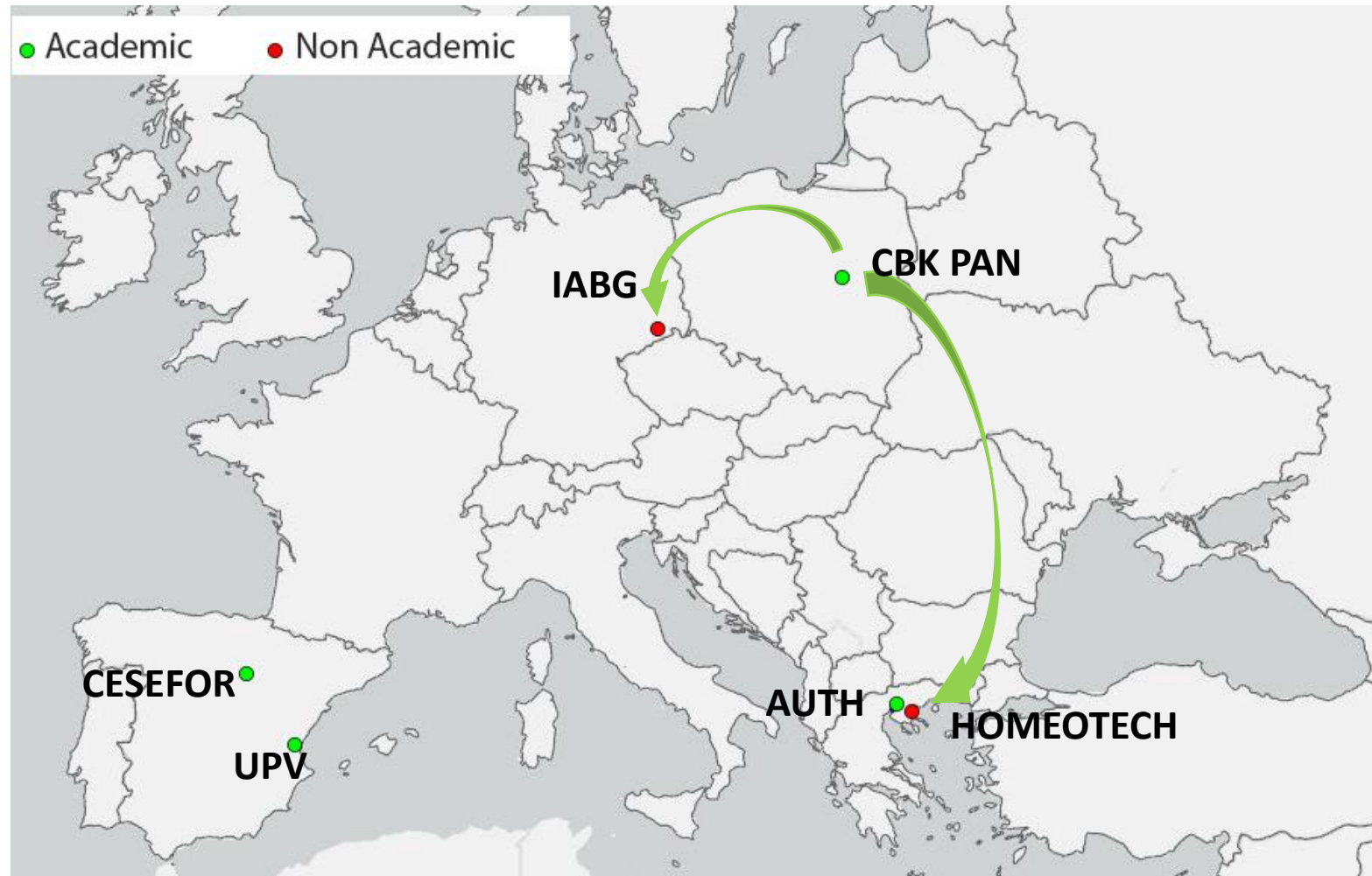
## Secondments (UPV)



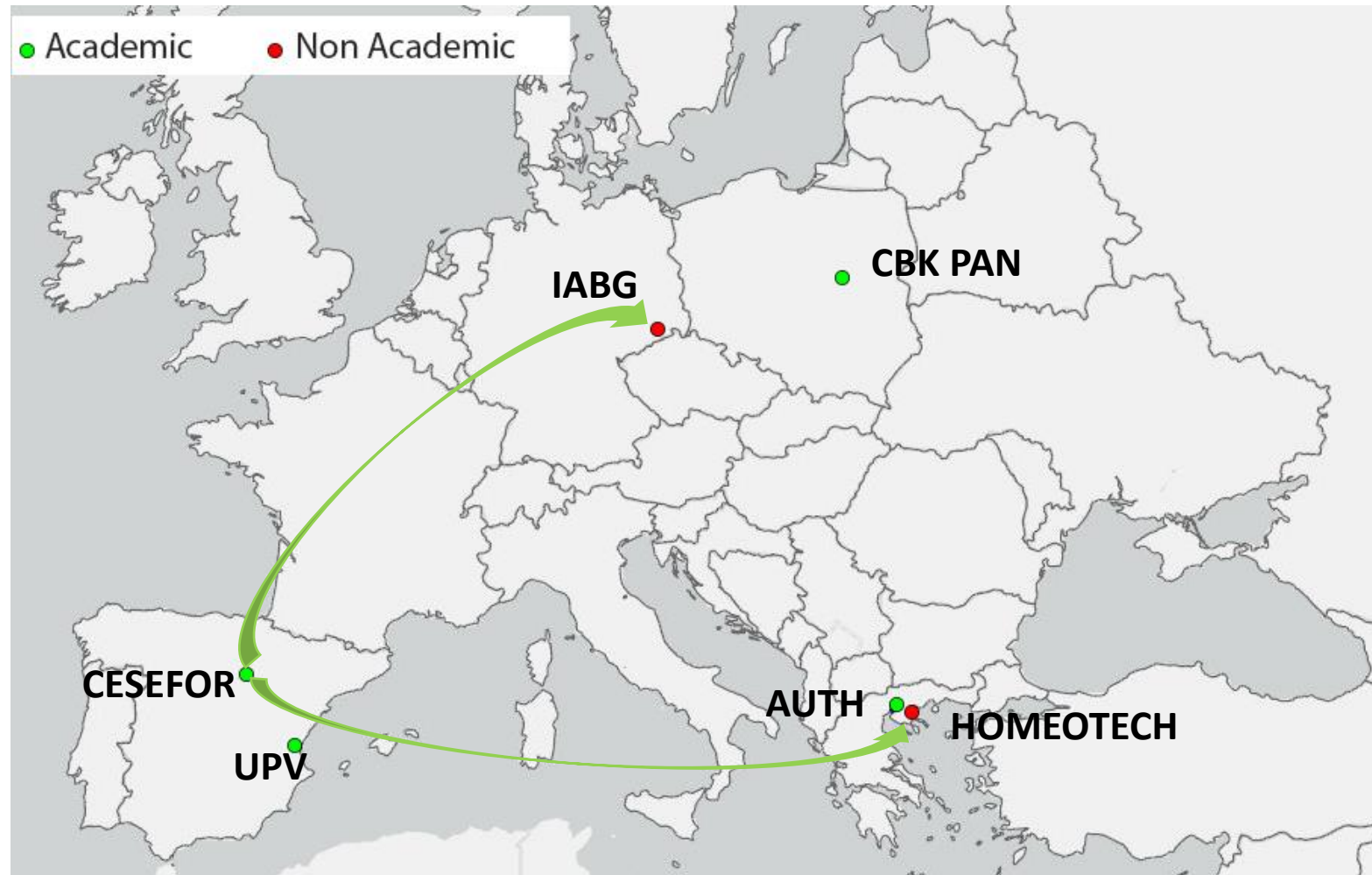
## Secondments (IABG)



## Secondments (CBK PAN)



## Secondments (CESEFOR)







# Achievements (Dissemination, Social Media)





## • Profiles:

- [marginallands.eu](http://marginallands.eu) 57'000 Unique visitors
- [Facebook](#) 97 likes | 91 Followers
- [Twitter](#) 548 Followers
- [Instagram](#) 129 Followers
- [ResearchGate](#) 17 Collaborators | 3 Followers | 42 Reads
- [YouTube](#) 39+ movies | 37 Subscribers | 2'840 Views



### 28 day summary with change over previous period



	<b>MarginalLands</b> @MarginalLands · Nov 22 3 days left to our open Workshop I 25-26 November 2021  Registration: bit.ly/3r1nDwo Agenda: bit.ly/3FFqAgAg pic.twitter.com/JIDawhs62D <a href="#">View Tweet activity</a>	4,050	286	7.1%
	<b>MarginalLands</b> @MarginalLands · Dec 3 Save the date! >> 13th of Dec 2021 <<  Final Conference of @MarginalLands project about the potential of #MarginalLands as #carbon sink in #Europe  Registration: bit.ly/3lk3dVF Agenda: bit.ly/3x5fkUM pic.twitter.com/SQbTe88pvA <a href="#">View Tweet activity</a>	983	41	4.2%
	<b>MarginalLands</b> @MarginalLands · Dec 6 One week left to our final conference! 🎉🎉 <a href="#">twitter.com/MarginalLands/...</a> <a href="#">View Tweet activity</a>	505	23	4.6%
	<b>MarginalLands</b> @MarginalLands · Nov 18 Save the date! >> 25th and 26th of Nov 2021 <<  Workshop about the potential of #MarginalLands as #carbon sink in #Europe	465	37	8.0%

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# Achievements (Dissemination, Publications, Press releases)

**Machine learning applied to the classification of riverine species using UAV-based photogrammetric point clouds**

Conference Paper Full-text available · Jun 2021

Juan Pedro Carbonell-Rivera · J. Estornell · Luis Ángel Ruiz · [...] · Pablo Crespo-Peremarch

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**CLASSIFICATION OF UAV-BASED PHOTOGRAMMETRIC POINT CLOUDS OF RIVERINE SPECIES USING MACHINE LEARNING ALGORITHMS: A CASE STUDY IN THE PALANCIA RIVER, SPAIN**

Article Full-text available · Aug 2020

Juan Pedro Carbonell-Rivera · J. Estornell · L. A. Ruiz · [...] · Pablo Crespo-Peremarch

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**Reads: 41**  
**Citations: 0**

**24 press releases**

**Aboveground Biomass Estimation in Short Rotation Forest Plantations in Northern Greece Using ESA's Sentinel Medium-High Resolution Multispectral and Radar Imaging Missions**

Article Full-text available · Jul 2021 · Forests

Nikos Theofanous · Irene Chrysafis · Giorgos Mallinis · [...] · Sofia Sihalou

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**Reads: 104**  
**Citations: 2**

**A review of the use of remote sensing for monitoring and quantifying carbon sequestration in marginal lands**

Conference Paper Full-text available · Oct 2021

Juan Pedro Carbonell-Rivera · J. Estornell · Luis Á. Ruiz · [...] · Jesús Torralba Pérez

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**Reads: 26**  
**Citations: 0**

**METHODOLOGICAL PROPOSAL FOR THE IDENTIFICATION OF MARGINAL LANDS WITH REMOTE SENSING-DERIVED PRODUCTS AND ANCILLARY DATA**

Conference Paper Full-text available · Jul 2021

Jesús Torralba Pérez · Luis A Ruiz · Charalampos Georgiadis · [...] · Juan Pedro Carbonell-Rivera

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**Reads: 19**  
**Citations: 0**



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# Thank you for your attention!



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