Meeting of the SWG SCAR AKIS Strategic Working Group on Agricultural Knowledge and Innovation Systems

Agroforestry Innovation Netwokrs. AFINET

Webinar 02/06/21

Member State AFINET Coordinator: Spain

SCAR
Standing Committee
on Agricultural Research

www.agroforestrynet.eu // www.eurafagroforestry.eu/afinet/

AGROFORESTRY INNOVATION NETWORKS

INNOVATION AND AGROFORESTRY

M. Rosa Mosquera Losada

www.agroforestrynet.eu // www.eurafagroforestry.eu/afinet/

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 727872.

AFINET
AGROFORESTRY INNOVATION NETWORKS

Agroforestry

What's agroforestry?

Why apply agroforestry

How to foster agroforestry?

Agroforestry

What's agroforestry?

An agroecology practice!

Tree or shrub
Woody perennials

CLIMATE

SOIL

Crop or Grass

Livestock

Light

Density and woody perennials distribution

Thinning

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Agroforestry

Why apply agroforestry

Sustainable land use (FAO)

Climate Smart Agriculture

Income

Mitigation

Adaptation

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Sustainable land use (FAO)

Climate Smart Agriculture

Income

Mitigation

Adaptation

Farmers income

a) Multiple products from land

Tree: timber, bioeconomy

Understory

b) Extending growing season

Crops

Grasslands

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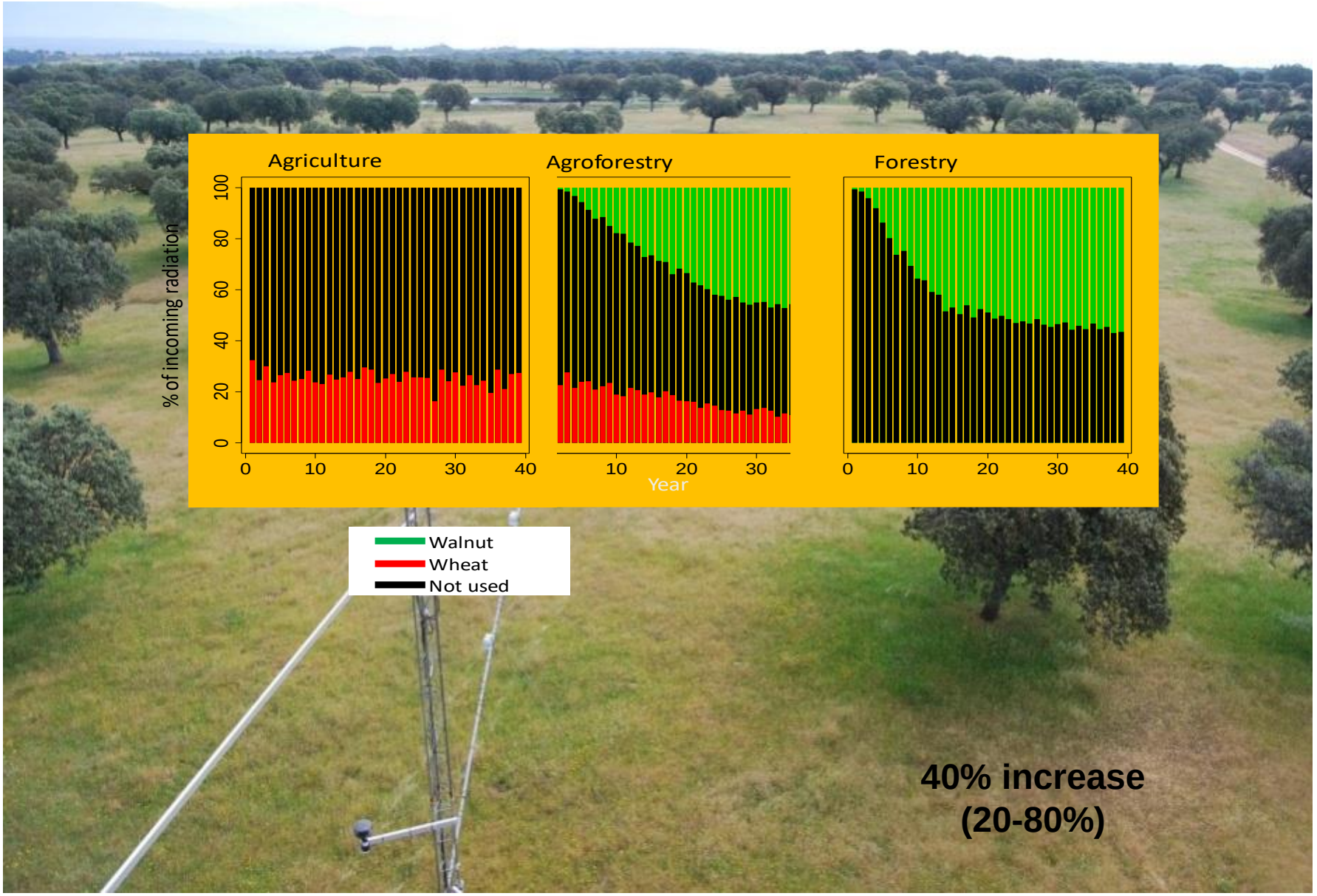
ECOINTENSIFICATION



Sustainable land use (FAO)

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Grasslands

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ASSOCIATION CLOVER + SHRUBS

WINTER

SUMMER

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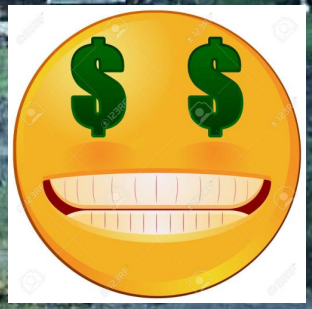
SHEEP CARRIED TO ALPS FROM MEDITERRANEAN AREAS



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Sustainable land use (FAO)

Climate Smart Agriculture

Income
Mitigation
Adaptation

Mitigation

a) **Increasing nutrient efficiency**

b) Increasing soil C sequestration

c) Reducing forest fires

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Nutrient contamination → *RIVERS*

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Sustainable land use (FAO)

Climate Smart Agriculture

Income
Mitigation
Adaptation

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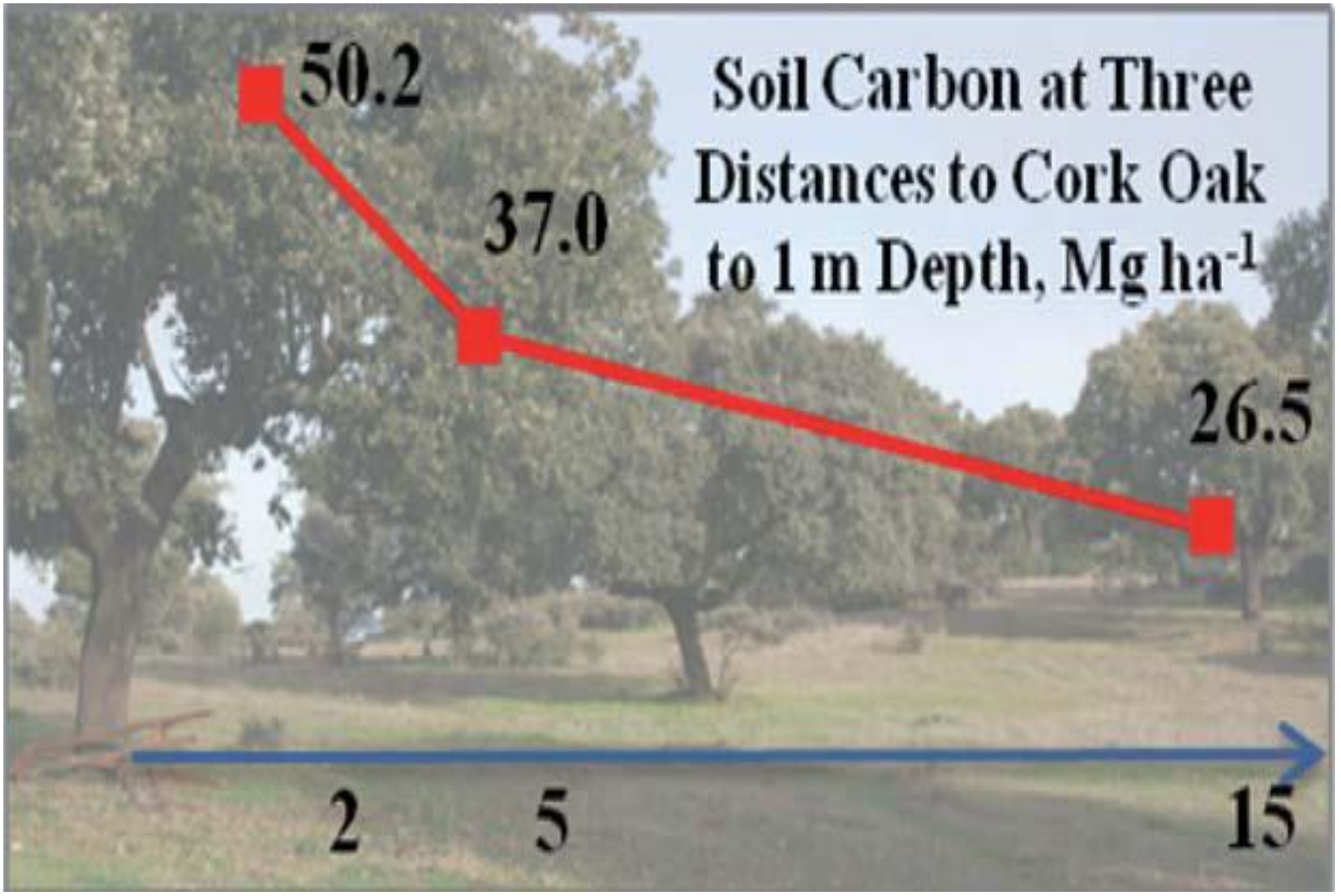
50.2
37.0
26.5
Soil Carbon at Three Distances to Cork Oak to 1 m Depth, Mg ha-1
2
5
15

Sustainable land use (FAO)

Climate Smart Agriculture

Income
Mitigation
Adaptation

Mitigation

a) Increasing nutrient efficiency

b) Increasing soil C sequestration

c) Reducing forest fires

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Forest fire riks reduction

Sustainable land use (FAO)

Climate Smart Agriculture

Income

Mitigation

Adaptation

a) Market

b) Weather

Changing environment

Extreme events

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Sustainable land use (FAO)

Climate Smart Agriculture

Income

Mitigation

Adaptation

a) Market

b) Weather

Changing environment

Extreme events

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MARKET RESILIENCE: MULTIPLE PRODUCTS

CLIMATE RESILIENCE: EXTENDING GROWING SEASON

↓↓↓ **Extreme heats impact**

↓↓↓ **Pesticide needs**

Agroforestry

How to foster agroforestry?

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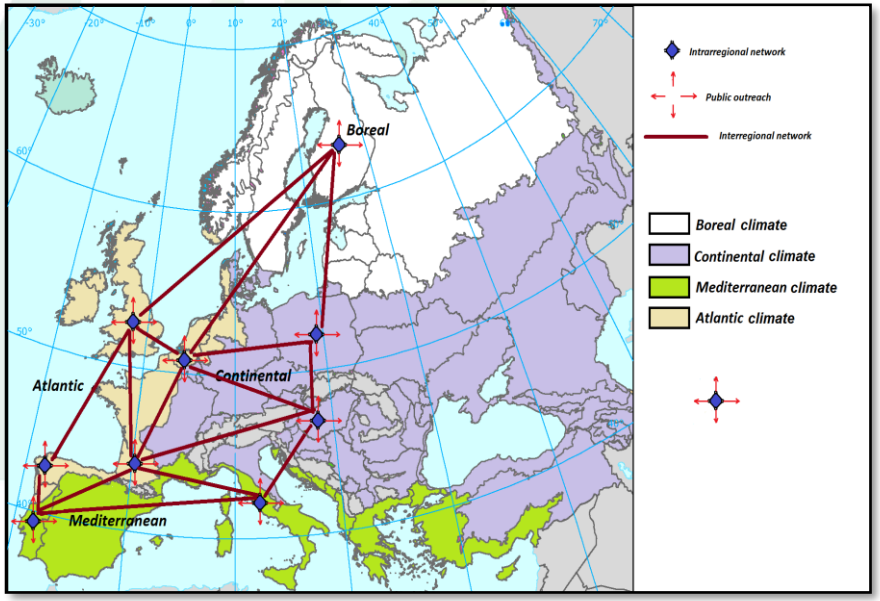
AFINET
Agroforestry Innovation Network

2 Million Euros



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- ✓ AFINET has 9 Regional Agroforestry Innovation Networks (RAINs) across Europe
- ✓ 400 actors met every six months (total 1491)

AFINET
AGROFORESTRY INNOVATION NETWORKS

First Rain Meeting


Which are the main challenges to foster agroforestry in Europe?

Second Rain Meeting

Solutions to the challenges were discussed and a provisional list of innovations was produced

Third Rain Meeting

Validation of the innovations list

Fourth Rain Meeting

Establisment of synergies

Fifth RAIN Meeting

The dissemination materials produced were presented

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AFINET 96 Innovations

Technical
Economic
Education
Policy

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AFINET Innovations

Technical
Economic
Education
Policy

Component combinations

How

Best mixtures

When

Tree age and shade

Where

Local adaptation

SOLUTION:
MORE RESEARCH AND INNOVATION DEVELOPMENT

Regional, National, international
Operational Groups

CAP PROMOTION

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- Knowledge cloud linked to Openaire

  http://www.eurafagroforestry.eu/afinet/knowledge-cloud/search

- Alive handbook

  http://agroforestrynet.eu/

Please Contribute!

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AFINET

Innovations

Technical

Economic

Education

Policy

Economic

Alternative evaluation

organic AF

conventional AF

Bioeconomy development

New products

Labelling

New market types

Infraestructure

Business environment

SOLUTION: **INNOVATION DEVELOPMENT**

Business Plans Infraestructure creation

Cooperatives development

CAP PROMOTION

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AFINET

Innovations

Technical

Economic

Education

Policy

Education

SOLUTION: **INNOVATION FOSTERING**

Extension services — Practice- Research Networks (TN)

Operational groups — Living labs

Consumers education — Demos

CAP PROMOTION & AKIS DEVELOPMENT

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AFINET

Innovations

Technical

Economic

Education

Policy

	Helpful to achieving the objective	Harmful to achieving the objective
Internal origin (attributes of the organization)	**Strengths** Income Environment Social	**Weaknesses** Complexity Knowledge Infraestructure
External origin (attributes of the environment)	**Opportunities** Ecointensification Mitigation Adaptation Biodiversity Water quality Animal welfare	**Theats** Lack of Market AKIS development Extension services Infraestructures Policies

WHAT´s AF?

WHY AF?

HOW implement AF?

AFINET

Premise

Agroforestry should be strongly supported by the CAP because

*sustainable land management option that delivers

market and

non-market goods and

services

that address

UN Global societal goals.

Governments need to develop

policies and

actions that foster agroforestry within an EU policy framework.

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Recommendation

1

Monitoring Definition

Agroforestry is *"the deliberate integration of woody vegetation (trees and/or shrubs) as an upper storey on land, with pasture (consumed by animals) or an agricultural crop in the lower storey.*

WOODY:

Evenly or unevenly distributed

Borders inside plots

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AFINET

Recommendation 2

Definition

Table 2. Spatial agroforestry practices in Europe

Agroforestry practice	Description	
Silvopasture		Combining woody with forage and animal production. It comprises forest or woodland grazing and pastoral land with hedgerows, copses, isolated/scattered trees or trees in lines or belts.
Silvoarable		Widely spaced woody vegetation inter-cropped with annual or perennial crops. Also known as alley cropping. Trees/shrubs can be distributed following an alley cropping, copses, isolated/scattered trees, hedges and line belts design.
Hedgerows, windbreaks and riparian buffer strips		Lines of natural or planted perennial vegetation (trees/shrubs) bordering croplands/pastures to protect livestock, crops, and/or soil and water quality. They can be combined with arable lands (silvoarable) or grasslands (silvopasture).
Forest farming		Forested areas used for production or harvest of natural standing speciality crops for medicinal, ornamental or culinary uses, including those integrating forest and agricultural lands.
Homegardens or kitchen gardens		Combining trees/shrubs with vegetable production in urban areas

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AFINET

Recommendation

2

Monitoring
Cateogrization

Land use and agroforestry practice		Examples	Brief examples and descriptions
AGRICULTURE	Silvopasture	Wood pasture and parkland	Typically areas used for forage and animal production that includes non-agricultural trees and shrubs.
		Meadow orchards	Typically areas of agricultural trees and shrubs (e.g. fruit orchards, olive groves, vineyards) which are grazed.
	Hedgerows, windbreaks and riparian buffer strips	Hedgerows, windbreaks and riparian buffer strips	Here the woody components are planted to provide shelter, shade, or parcel demarcation to a crop and/or livestock production system. Riparian buffer strips are typically created to protect water quality and can be silvopasture or silvoarable.
	Silvoarable	Alley-cropping systems	Widely spaced woody perennials inter-cropped with annual or perennial crops. As the tree canopy develops, the crops may be replaced with a grass understorey.

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Recommendation

3

Monitoring
Coherence and burden reduction
Landscape features

Woody vegetation promotion and preservation linked to **landscape features policies** associated with Pillar I and Pillar II payments should be simplified and objectives should be clearly stated, and the administrative burden reduced.

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Recommendation 4

Monitoring:
Agroforesry Management plan and agroforestry option in the CAP payment system

FULLY ELIGIBILITY:

Arable and Permanent Grassland

AF in Arable and permanent grassland fully eligible if

i) a "**management plan**" including a minimum tree density (to be selected by member states), an initial and final tree density, and the pursuit of a final maximum tree density

ii) '**agroforestry option**' should be implemented in all three categories of land use (i.e. arable land, permanent grassland and permanent crops).

Permanent crops

Promotion

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Recommendation

5

Monitoring:
Identification of AF in arable lands
Payment for results

ARABLE LANDS

Fully eligible for direct payments

a) Minimum and maximum tree density if needed selected by member states different from young and mature woody perennials

b) Recognition of Ecosystem Services

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AFINET

Recommendation

6

Monitoring:
Identification of AF in Permanent Grasslands
Payment for results

PERMANENT GRASSLAND

Fully eligible for direct payments

a) Minimum and maximum tree density if needed selected by member states

b) Use of woody perennials as feed to reduce farm production costs

c) Recognition of Ecosystem Services

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AFINET

Recommendation

7

Monitoring:
Identification of AF in Permanent Crops
Payment for results
Double payment per product

PERMANENCT CROPS

Already fully eligible for direct payments

a) Implement Silvopasture

b) Implement Silvoarable

c) Double payments based on each product

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Recommendation

8

Recognition: Ecoschemes

AGROFORESTRY

Should be part of:

a) Greening as such

b) Ecoschemes

Agroforestry including

- Establishment and maintenance of landscape features above conditionality (Climate change mitigation, Water protection, Soil degradation, biodiversity protection)
- Management and cutting plan of landscape features (biodiversity protection, Pesticides use reduction)
- Establishment and maintenance of high-biodiversity silvopastoral systems

HNV

- Shepherding on open spaces and between permanent crops, transhumance and common grazing (climate change adaptation, soil degradation prevention, biodiversity protection, Pesticides use reduction, Animal welfare)

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Recommendation

9

Monitoring and control:
Establishing in Arable, PG and PC
Remaining Pillar I direct payments

PILLAR II

Identification:

a) Silvopasture
b) Silvoarable,
c) Riparian buffer strips
d) Forestry
e) Homegardens

Arable, PG, and PC should be fully eligible for Pillar I direct payments

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Recommendation

10

Rewards in Arable lands:
Establishment
Management

PILLAR II: AGRICULTURAL LANDS

i) establishment of agroforestry on agricultural land including maintenance payments similar to that of afforested/reforested lands and

ii) improved management and recovery of already existing agroforestry lands.

Fully eligible
Management plans

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AFINET

Recommendation

11

Rewards in Forest lands:
Establishment
Management

PILLAR II: FOREST LANDS

a) **Establishment and maintenance** of forest farming and forest grazing (if not included as Established Local Practices).

b) Support **management improvement** of forest farming and forest grazing of existing agroforestry areas.

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Recommendation

12

Rewards :
Farmers networking
(peer to peer learning)
at
landscape/farm level

Co-operation measures for sustainable landscapes

a) **co-operation measures** which allow the benefits of AF to be recognised at landscape.

b) **Facilitating co-operation** among farmers within a catchment including landscape linking biodiversity of habitats.

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Recommendation

13

Rewards in Forest lands: Establishment Management

Co-operation measures for value chains

a) Support co-operation measures value chain for selling products

b) Between agricultural and forestry sectors fostering the circular economy.

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Recommendation

14

AKIS development
1.- Extension service provision
2.- EIP-Agri activities

Agroforestry is knowledge intensive, and so needs to be supported through:

a) excellent well-trained and independent extension service providers.
b) Activities related to EIP-Agri, extension services, knowledge co-creation should be promoted under relevant Pillar II measures.

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GLOBAL Recommendation

A **European Agroforestry Strategy** should be designed to foster agroforestry in Europe. Such a strategy should include aspects related to current promotion, education, innovation and research on agroforestry at a European level, and provide guidance for national agroforestry strategies.

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WHERE?

< 10% Grasslands

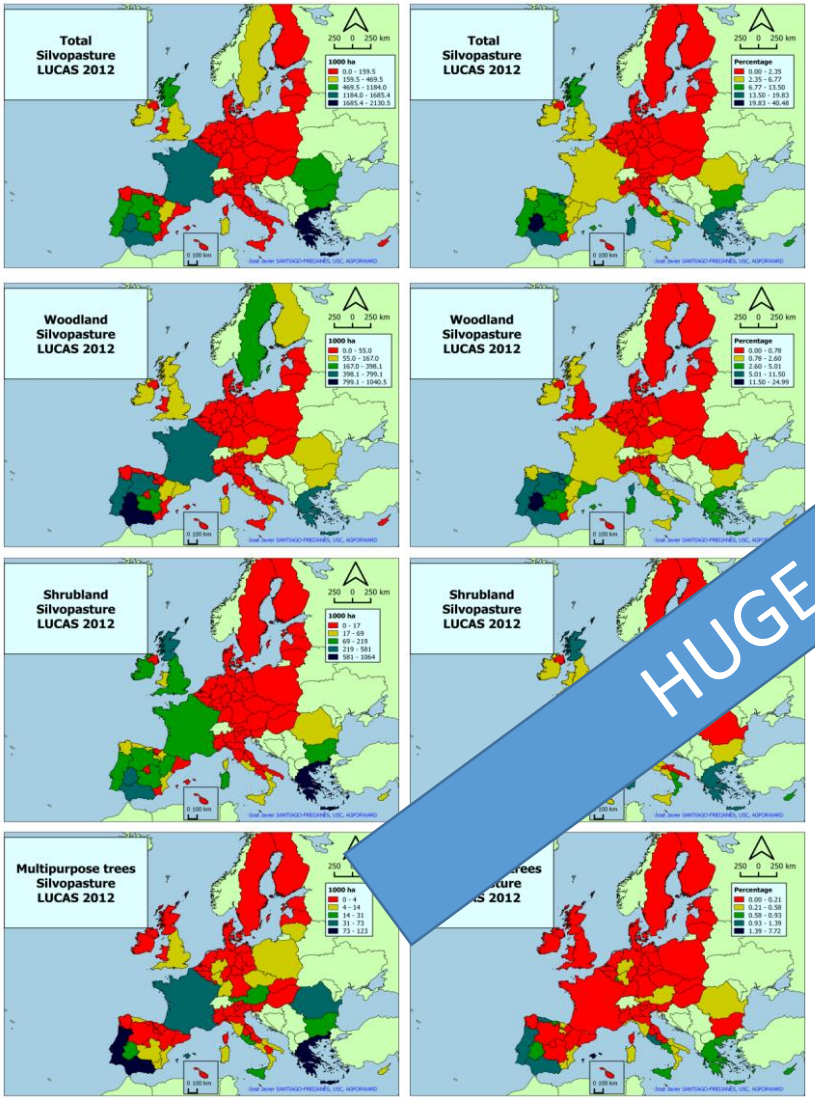
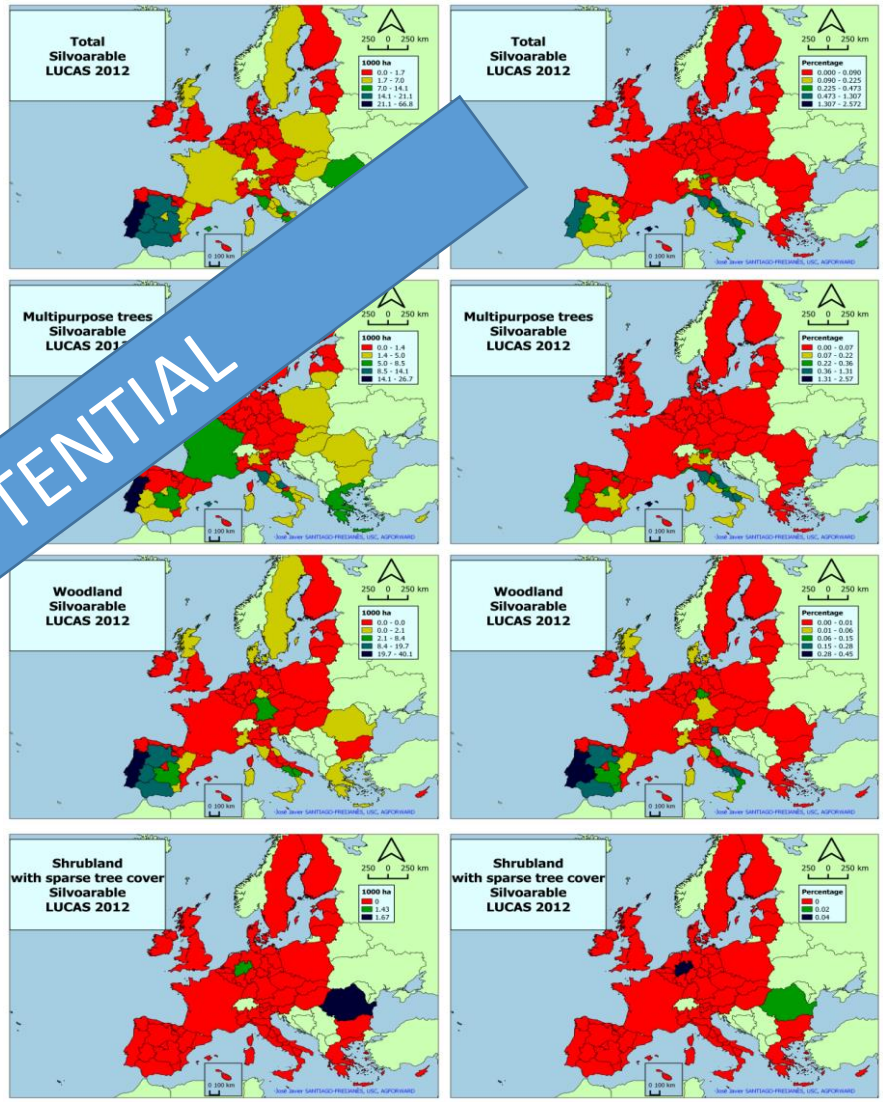


Figure 1. Area (left) and proportion (right) of European land use associated with all silvopasture, woodland silvopasture, shrubland silvopasture, and silvopasture with multi-purpose trees

<0.01% Arable lands



HUGE POTENTIAL

Figure 1. Silvoarable practices linked to permanent crops (top), woodland (medium) and shrubland with sparse tree cover expressed as percentage (left) and hectares (right) per region in Europe

CLIMATE CHANGE
Dr. Stephen Hammer

INNOVATION IS THE SOLUTION

COP25
CHILE
MADRID 2019
UN CLIMATE CHANGE CONFERENCE

BIG THANKS FOR YOUR ATTENTION

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AGROFORESTRY INNOVATION NETWORKS

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Universidade de Lisboa

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ELM FARM

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AGRICULTURE & INNOVATION

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What is next?

- AE4EU Policy WP leadership:

University of Santiago de Compostela

Please contribute!

SCAR
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Thank you for your attention!
and for your active participation and commitment!

Report available at:
https://ec.europa.eu/info/news/knowledge-and-innovation-unlocking-potential-food-and-farming-2019-sep-26_en (more paper copies can be asked to Inge.Van-Oost@ec.europa.eu)
AFINET coordinator e-mail: mrosa.mosquera.losada@usc.es