

# **LIFE REGEN FARMING - Demonstration of a sustainable agricultural and livestock soil management alternative**

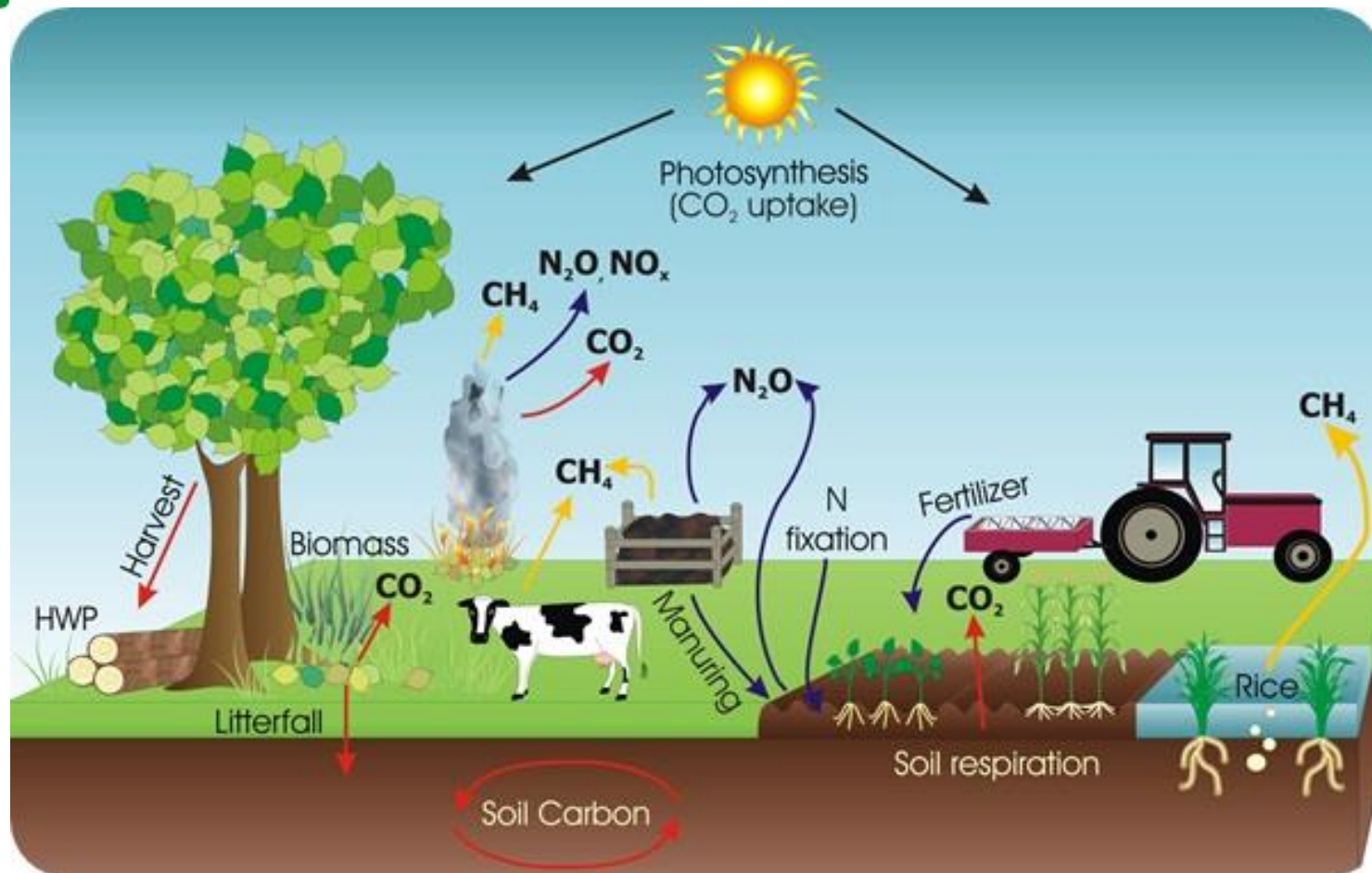
## **LIFE12 ENV/ES/232**

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**Brussels, 1<sup>st</sup> of June 2017**





# LifeRegen Farming



Sources and sinks of GHG emissions in agriculture, forests, and other land use systems ([IPCC 2006](#))



- **Objective:** to test the viability and effectiveness of the management of pastures based on the regenerative agriculture principles, as well as to disseminate and transfer the results obtained.
  - Increase grazing time with “**Planned grazing**”
  - **NO inorganic fertilizer**, only manure
  - **Avoid tillage/soil plough** by direct pasture sowing
- **2013-2016: Monitoring**
  - Dairy sheep: 2 experimental Latxa breed flocks.
  - Beef cattle: 4 commercial farms, organic.





# Planned Grazing

The screenshot displays the VisorSigPac web application interface. The main map area shows an aerial view of a rural landscape with a green polygon outlining a planned grazing area. The interface includes a top menu bar with options like 'Archivo', 'Edición', 'Ver', 'Favoritos', and 'Herramientas'. A sidebar on the left contains a scale bar and a coordinate panel. The coordinate panel displays the following information:

Datum: ETRS89	
Latitud:	42° 51' 21.08" N
Longitud:	2° 37' 8.55" W
Huso UTM:	30
Coordenada X:	531.123.76 m
Coordenada Y:	4.744.878.52 m
Nivel:	17
Versión 6.8.4	

At the bottom of the interface, there is a taskbar with icons for 'Inicio', 'Garmin ANT Agent(tm)', 'ORTOFOTOS', and 'VisorSigPac - Window...'. The system clock in the bottom right corner shows the time as 13:35.

Experimental Flock  
Latxa Dairy Sheep  
Arkaute, Northern Spain

Spring and autumn 2014-16



2014-15	Continuous	Planned
Grazing days/paddock	7±1	10±2
Resting days/paddock	15±3	24±2
Grazing times/paddock (spring)	4	3

LIFE REGEN FARMING - Pastoreo 2014												MES: ABRIL						
dia	Salen (hora)	Entran (hora)	HUETOS (1)				FRUTALES (2)				SAN MILLAN (3)				Observaciones			
			Dirigido		Libre		Dirigido		Libre		Dirigido		Libre					
			1	2	3	4	n° ovejás	1	2	3	4	n° ovejás	1	2		3	4	n° ovejás
1	12:00	14:00																
2	12:30	16:30																
3	12:00	16:30																
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12	11:00	17:30																
13	10:30	17:30																
14	11:15	18:00																
15	11:00	18:00																
16	11:00	19:00																
17	11:00	18:00																



Datum: ETRS89

Latitud: 42° 51' 21.08" N

Longitud: 2° 37' 8.55" W

Huso UTM: 30

Coordenada X: 531.123.76 m

Coordenada Y: 4.744.878.52 m

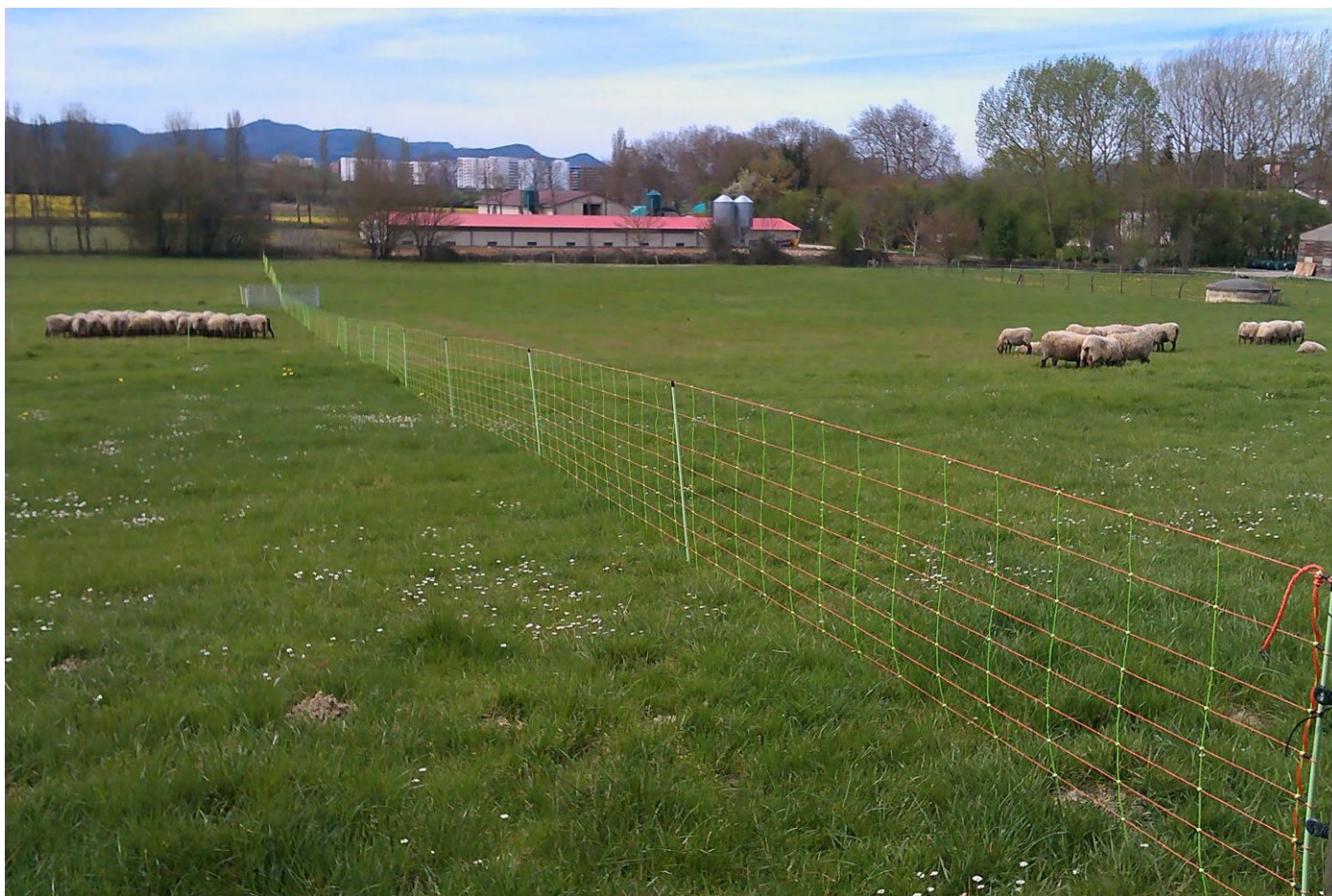
Nivel: 17

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LifeRegen  
Farming









## Carbon footprint (-10%)

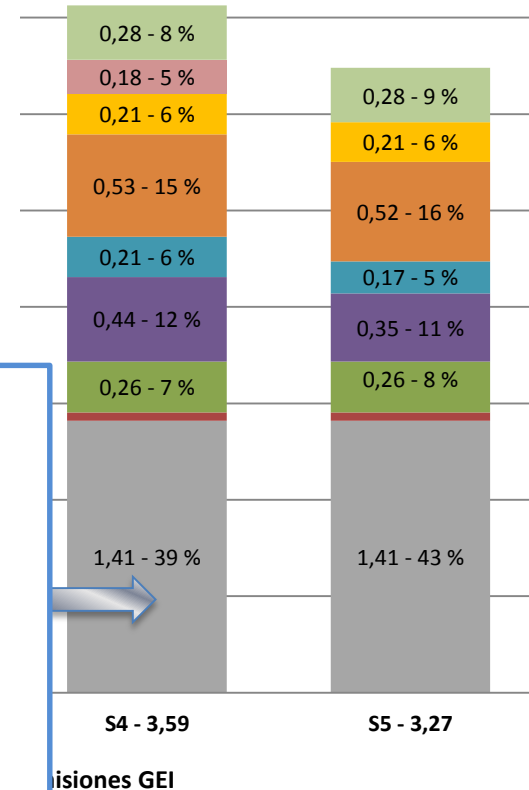
### Regenerative practices reduce GHG emissions associated to:

- Mineral fertilization (- 100%)
- Manure management (- 2%)
- Direct N<sub>2</sub>O emissions (- 20,5%)
- Indirect N<sub>2</sub>O emissions (- 19%)

Highest emissions – **enteric methane**.

CF tool does not consider forage quality or fat use. Pineda-Quiroga et al (2014):

From 2-17% CH<sub>4</sub> emissions reduction due to high quality forage and higher fat content in the concentrate (cold-pressed rapeseed cake)



■ FERMENTACIÓN ENTÉRICA (Kg CH<sub>4</sub>)

■ GESTIÓN DE ESTIÉRCOL (Kg CH<sub>4</sub>)

■ GESTIÓN DE ESTIÉRCOL (Kg N<sub>2</sub>O)

■ EMISIONES DIRECTAS DE N<sub>2</sub>O

■ EMISIONES INDIRECTAS DE N<sub>2</sub>O

■ COMPRA DE CONCENTRADOS

■ COMPRA DE FORRAJES

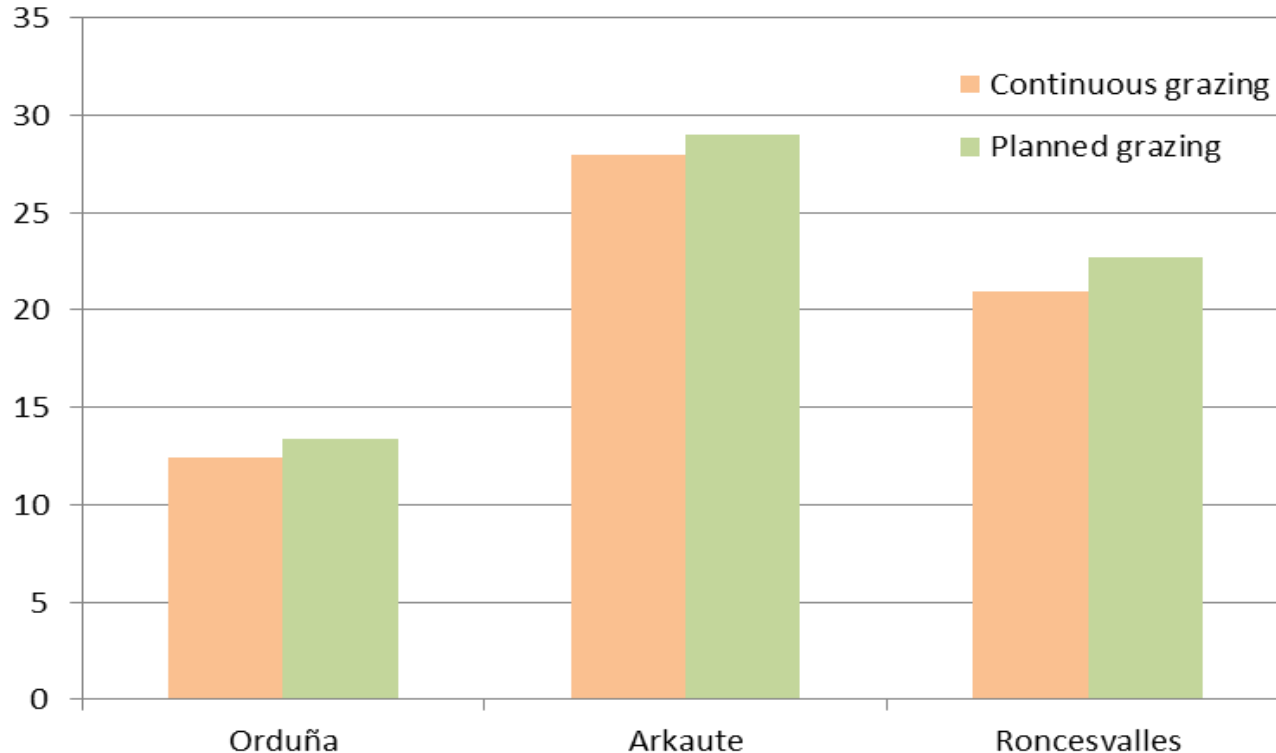
■ FERTILIZANTES MINERALES

■ CONSUMO ENERGÉTICO





## Soil - Carbon fixation: POM (+7%)



Particulate organic matter: soil organic matter between 0.053 mm and 2 mm in size; includes partially decomposed soil detritus and plant material, pollen, and other materials. POM is readily decomposable and serves as a source of food or energy for soil organisms and nutrients for plants. POM also enhances soil structure leading to increased water infiltration, aeration and resistance to erosion.



## Lessons learnt:

- Potential of grasslands and livestock to reduce emissions and fix carbon in the soil
- Suitability of regenerative practices: depend on the farming system and land resources
  - Accessibility to plots
  - Meat vs. dairy systems

## Nowadays:

- Longer term impact assessment
- Transfer and implementation in commercial farms





## GAPS & BARRIERS

Specialization: CROPS vs LIVESTOCK

- How to foster linkage livestock – agriculture?

Consider grazing management practices into environmental services payment schemes

- Monitoring



<http://regenfarming.eu/>



**THANK YOU**

