Life LowCarbon Feed - Climate Change Mitigation trough an innovative goat feed based on agricultural waste recycling

LIFE16 CCM/ES/000088

Project description Environmental issues Beneficiaries Administrative data
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Project description:

Background

Agriculture contributes to 10% of total EU greenhouse gas emissions, and the European Commission estimates that by 2050, the sector could account for a third of such emissions. Climate policy must therefore reflect the prominence of this sector. The main climatic problem addressed by the project is the emission of GHG in the processes of elimination of agricultural residues, both citrus and rice, as well as in livestock farms to produce goat milk.

Pruning waste from citrus trees are currently burned or incorporated to the soil through the so-called “green crushing”. Burning of wastes causes large amounts of CO2, CH4, CO, N2O, NOx and particle emissions. Elimination through crushing entails the fixation in soil of about 20-35% of the carbon contained in the pruning wastes, therefore the remaining 65-80% is emitted into the atmosphere as CO2 and CH4. Considering the area devoted to citrus production in Spain and Europe, it is estimated that GHG emissions due to the elimination of pruning waste from citrus trees amount to more than 720 000 tCO2eq/year and about 1 200 000 tCO2eq/year respectively.

Regarding rice straw, this waste has also been traditionally eliminated through controlled burning, releasing into the atmosphere large amounts of CO2, CO, CH4, NOx, SOx, dioxins, polycyclic aromatic hydrocarbons and particles. The aid schemes linked to agri-environment measures included in the Common Agricultural Policy are conditioned to the banning of this practice. As a result,

the regional authorities of Valencia recommended that this waste could be directly incorporated to the soil. However, this alternative practice increases the content of organic matter in soil and causes additional emissions of CH4. Therefore, Valencian growers are still asking for permits for the burning of rice straw. Emissions linked to this practice are about 650,000 tCO2eq/year in Spain and about 2 600 000 tCO2eq/year in Europe.

Finally, goat rearing in France, Spain and Greece accounts for 24%, 18% and 16% of the production of goat milk in Europe. It is estimated that every goat generates around 115.6 kgCO2eq/year. Considering the current goat population in Spain and Europe, the GHG emissions associated to goat rearing amount to about 300 000 tCO2eq/year for 3 000 000 goats in Spain, and more than 1 400 000 tCO2eq/year for 12 700 000 goats in Europe.

Objectives

The LowCarbon Feed project aims to implement new low-emission methods and innovative practices in agriculture and farming in order to perform an effective recovery of agricultural waste from citrus and rice production instead of incineration, and to convert them into a new animal feed capable of reducing methane emissions in ruminants, mitigating climate change in agriculture and farming, specifically goat farming.

The specific objectives of the project are to:

- Demonstrate the technical and economic viability of the recovery of citrus and rice straw waste to produce feed in a process that reduces greenhouse gas emissions;
- Demonstrate the technical and economic viability of the production of a new animal feed based on agricultural waste;
- Demonstrate the nutritional characteristics, environmental benefits and the emissions reduction potential of the new feed in goat farming;
- Validate the new product in the market through customer satisfaction and competitiveness on price and quality;
- Create and implement new policies on a local and regional scale that have the capacity to influence European policies;
- Develop a plan for the replication of the project in other European countries;
- Disseminate the results of the project and increase awareness among stakeholders and the public; and
- Monitor project results to achieve indicators that allow an efficient evaluation of the results.

The LowCarbon Feed project contributes to the climate action sub-programme by supporting the implementation of European climate policies and preparing the EU for climate challenges of future years. In addition, in line with paragraph III on low carbon innovation of ‘A Roadmap for moving to a competitive low carbon economy in 2050’, the project increases the productivity of land use in a sustainable manner by: i) obtaining better fodder by creating feed of high nutritional value produced from citric and rice waste that eliminates greenhouse gas emissions caused by burning of agricultural waste in fields and paddies; ii) increasing milk quality in the goat livestock sector, with 20% reduction of

methane emissions; and iii) restoring wetlands and moss-hag areas through waste management in rice fields.

Expected results:

- Recovery of 70 tonnes of citrus waste and 25 tonnes of rice straw for conversion into feed, eliminating greenhouse gas emissions (equivalent to 176 tonnes of CO2);
- Creation of a forage feed based on citrus and rice waste with a cost below €120 per tonne and a milk forage unities ratio above 0.75;
- A 20% reduction of greenhouse gas emissions from goats consuming the feed;
- Validation of the feed product by at least 10 farmers;
- A local plan for citrus waste management in the municipality of La Vall d'Uixó;
- A local plan for the rice straw waste management in the municipality of Valencia;
- Modification of policy on conditionality in the Comunidad Valenciana;
- Modification of policy on agro-environmental aids in the Comunidad Valenciana;
- Replicability of the value chain in the Italian market, involving at least 10 actors; and
- 10 agreements with producers and distributors of animal feed in other farming sectors in Spain and Europe.

Results

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Environmental issues addressed:

Themes

Climate change Mitigation - GHG reduction in non EU ETS sectors

Keywords

waste recycling, emission reduction, greenhouse gas, agricultural waste, animal foodstuff

Target EU Legislation

- Climate Change & Energy efficicency
- COM(2014)15 - Policy framework for climate and energy in the period from 2020 to 2030 (22.01.2014 ...
- COM(2011)112 - "A Roadmap for moving to a competitive low carbon economy in 2050" (08.03.2011)

Natura 2000 sites

Not applicable

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Beneficiaries:

Coordinator	La Unió de Llauradors i Ramaders del País Valencià
Type of organisation	Professional organisation
Description	La Unió de Llauradors i Ramaders del País Valencià is an agricultural professional organisation formed in 1977 to defend the interests of farmers of the Valencia region. It currently has more than 18 000 members, 60 employees and more than 40 offices across the region's three provinces. The organisation represents its members in contacts with public administrations on issues relating to the agricultural and livestock sector. Members are organised internally according to their production sectors and their geographical areas. They are also part of a national platform (Union of Unions).
Partners	Airatec Biomass S.L., Spain Ayuntamiento de La Vall d'Uixó, Spain Universitat Politècnica de València, Spain UNIPROCA SOCIEDAD COOPERATIVA, Spain AYUNTAMIENTO DE VALENCIA, Spain Fundación de la Comunitat Valenciana para una economía baja en carbón (Lowcarbon Economy Foundation), Spain Area Europa scarl, Italy

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Administrative data:

Project reference	LIFE16 CCM/ES/000088
Duration	03-JUL-2017 to 31-MAY -2020
Total budget	1,174,439.00 €
EU contribution	700,161.00 €
Project location	Comunidad Valenciana(España)

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