ECOCIRPLAS 2020. – Developing a new process for the management of agricultural plastics

EAFRD-funded projects

Spain

Renewable sources & waste management

Location
Navarra

Programming period
2014 – 2020

Priority
P5 - Resource efficiency & climate

Measure
M16 - Cooperation

Funding
Total budget 157 500.00 (EUR)
EAFRD 92 137.50 (EUR)
National/Regional 49 612.50 (EUR)
Private 15 750.00 (EUR)

Project duration
2020 – 2021

Project promoter
Unión de Agricultores y Ganaderos de Navarra (UAGN) – Coordinating entity

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CAP cooperation project pioneers the potential for re-using agricultural plastic waste in Spain.

Summary

A scarcity of collection mechanisms and collection points for plastic used on Spanish farms had made it difficult to manage this agricultural waste stream. A consortium consisting of different value chain stakeholders launched this cooperation project to create an innovative alternative for the management of plastic mulch waste and a circular economy processing model to transform it into new products that can be reused in agriculture.

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Project Results

The project demonstrated that all recycled plastic from farms can potentially be transformed into useful products for the sector.

Participating farms increased the percentage of their plastic waste that they sorted and recycled.

The project raised awareness about an important environmental issue among sector stakeholders.

Lessons & Recommendations

- ❑ The consortium was composed of multiple sector stakeholders, therefore benefitting from a broad range of expertise and capacity to act along the value chain.

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Context

Some 6.12 million tonnes of plastics are used each year in the agricultural sector. This amount is estimated to increase to some 12.30 million tonnes by 2050. In Europe, Spain has the highest level of plastic film consumption at over 80 000 tonnes per year, and Navarre - the fifth largest producer of plastic waste at national level behind Andalusia - has a recycling rate of only 11% due to its complex management.

Organisation and control of agricultural plastic waste was not considered efficient by the project promoters. A scarcity of collection points made it difficult to gather the waste and this, combined with a lack of recyclers for some other types of waste, (such as plastic mulch) had led to farmers abandoning or 'fly-tipping' their waste.

A widely replicable plastic waste management solution was considered important by the project promoters. This should address every point in the value chain and be technically and economically viable.

Objectives

The aim of this project was to develop an innovative circular economy process for agricultural plastic mulch by recovering it from the field and transforming it into useful products through a complete and sustainable process.

Activities

Activity 1 - Test design. This first phase outlined the parameters and methodology for the trials and determined the best combination of machinery, plastic, crop and ecosystem, along with associated management practices.

Activity 2 - Pre-treatment of plastic waste at the "El Culebrete" waste treatment plant. Plastic waste requires pre-treatment (cleaning, roughing, and sorting) before being passed on to the recovery chain in the factory. The management and technical-economic processes of this pre-treatment were monitored and analysed throughout.

Activity 3 - Market research and analysis of public procurement and regulatory framework. Through a wide sector consultation, the project partners identified a range of agricultural products and outlined the technical characteristics that - dependent on having the facilities to produce them from processed plastic waste - would bring them in line with market requirements.

Activity 4 - Factory processing and prototyping. Carrying out the necessary tests to ascertain the functional and technical feasibility of manufacturing the products identified in Activity 3. Building a set of prototype products.

Activity 5 - Functional, environmental and market validation. Assessing the prototype products and processes (from waste collection and pre-treatment, through to recovery, processing, and final product) to determine whether they are in line with both market requirements and the principles of circularity.

Activity 6 – Sharing results and good practices within the agricultural sector. The project's website and social networks were the primary communication channels, in addition to a demonstration day, which was held for farmers, cooperatives, sector professionals and the local administration.

Entities involved were Grupo AN, Unión de Cooperativas Agroalimentarias de Navarra (UCAN) and Unión de Agricultores y Ganaderos de Navarra (UAGN).

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Main Results

Plastic recycling rates increased to 45% by using conventional waste treatment facilities.

The actions and tests carried out by this project have demonstrated that all recycled plastic can potentially be transformed into useful products for the sector and that, therefore, a fully traceable and sustainable plastic waste management system is possible.

The project raised awareness about an important environmental issue among sector stakeholders.

Key lessons

This project was conceived with the idea of integrating the entire value chain and developing a transferable model of practice. The consortium was therefore composed of multiple stakeholders in the creation of a project vision that incorporates multiple perspectives and a broad range of expertise. For this reason, it has the potential to make a positive social, economic, and environmental impact.

Additional sources of information

https://ucan.es/

https://iterinvestigacion.com/

http://solteco.org/

https://www.grupoan.com/

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