FOREST4EU

ITHub 4 – Non-Wood Forest Products

FOREST4EU partner: BOSCAT

OG: CLIM'AGIL

OG's country: Spain

Type of Innovation: Technological Innovation

Geolocation and monitoring of animals to identify possible incidents and improve the management of animals and pastures

Introduction

The project aims to provide the extensive livestock farming sector (cattle, horses and sheep) with new technological tools to obtain and manage as much data as possible from a herd with minimum involvement by the farmer. Geolocation and monitoring of animals uses various algorithms to analyse the information collected in order to identify possible incidents and improve the management of animals and pastures. This Operational Group, consisting of the Unió de Pagesos (Farmers' Union of Catalonia), the Institute of Agrifood Research and Technology (IRTA), Digitanimal, SL and the cooperatives Pirenaica Societat Cooperativa C. LTDA and Agrària Ramadera del Pallars de Sort, SCCL, focuses on exploring the full potential that these technologies can provide help to overcome the main challenges facing the sector:

1 – Improving the economic viability of farms.

- Adjustment of the devices to herd activity patterns to improve technical-health-financial management.
- Provision of the location and monitoring of the movements and condition of animals and herds.
- The task requiring the most labour is supervising the herd and monitoring the animals' health (behaviour, diseases, births, etc.). Reducing working hours is a key factor in lowering costs and increasing the financial viability of farms.

2 – Efficient and sustainable use of natural resources and the maintenance of biodiversity.

- Analysis of the grouped data related to the animals' location to determine grazing pressure, preserve the pasture's quality and ensure the sustainability of the silvopastoral system.

3 – Proximity of herds to wildlife.

- A third challenge is the fact that herds live in proximity to other wildlife. The technology for detecting wildlife attacks will be assessed, and patterns of behaviour to detect and document them will be established.
- Facilitate control of herds, management of technical-health and pasture data to improve the productivity and viability of extensive livestock farms by using geolocation systems and by monitoring animals using collars.

Characteristics of the technological tools:

- A position sensor that shows the location.
- A triaxial accelerometer, which shows the level of activity. -A surface temperature sensor.
- A low-consumption long-range communications module.
- A cloud server, and various databases and algorithms for extracting patterns and creating notifications.
- A long-life battery.

Lessons learned

In conclusion, it has been proved that this technology is an opportunity for extensive livestock farming, even though the following is necessary: Ensuring proper network to achieve the greatest emissivity of collars. Shepherds should know what type of network they got when purchasing collars (mobile network, Sigfox network, Lora network...). Antenna installers are recommended. They should be technicians (which may belong to the own public administration, if it already exists, or to the private sector) and would be in charge of the antenna maintenance and testing before animals reach the mountain and during the season.

The information presented in this factsheet was developed by the FOREST4EU partner, drawing on the innovations and knowledge generated by the indicated operational group with their explicit authorization.

Further information

https://www.youtube.com/watch?v=lqf-Sdv5Ods

Company contact, e-mail: uniopagesos@uniopagesos.cat

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