

LIVEBIOTRACK aims to enhance the efficiency, sustainability, and resilience of pasture-based livestock systems by developing and validating innovative Precision Livestock Farming solutions based on green electronics.

THE CHALLENGE



Limited animal control
Difficulties in monitoring location, behavior, and welfare.



Predation losses
Increasing pressure from large carnivores.



Poor knowledge of pasture availability
Lack of timely and spatial information on biomass and forage quality.



High labor demand
Traditional management is time consuming and inefficient.

LIVEBIOTRACK INTEGRATED APPROACH

1 GREEN ELECTRONICS DEVICES



- Biodegradable cases
- GPS collars
- Low-power electronics
- Energy harvesting
- Sustainable materials

Low impact on animals and the environment

2 ANIMAL MONITORING



- GPS location
- Activity and behavior
- Welfare indicators
- Physiological parameters

Real-time data from animals

3 PREDATION DETECTION



- Behavior anomaly detection
- AI-based algorithms
- Accelerometer analysis
- Real-time alerts to farmers

Early warnings to reduce losses

4 PASTURE MONITORING



- Sentinel-2 imagery
- Biomass estimation
- Forage quality assessment
- Spatial grazing maps

Up-to-date information on pasture resources

5 DECISION SUPPORT PLATFORM

- ANIMAL DATA + SATELLITE DATA + AI ALGORITHMS



Integrated Decision Support System
Real-time grazing management and decision support

6 FIELD VALIDATION

- Cattle, goats, sheep

8 pilot farms

200+ devices under development and field validation

60 months project duration

Testing and co-design with farmers

EXPECTED IMPACTS



Improved grazing efficiency and pasture utilization



Reduced labor demand and management costs



Better animal welfare



Lower predation losses

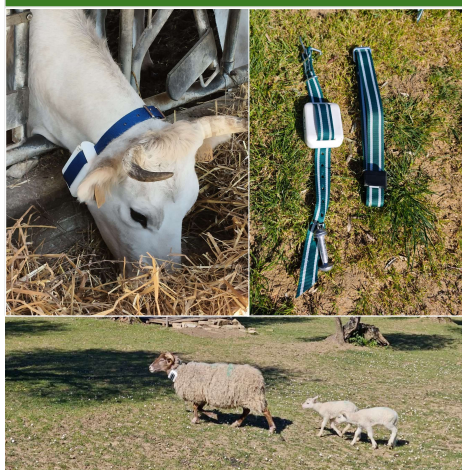


Sustainable and environmentally friendly technologies



More resilient and competitive livestock systems

INNOVATIVE DEVICES



Collar prototype

DECISION SUPPORT PLATFORM - EXAMPLE



Animal tracking and welfare



Predation alerts

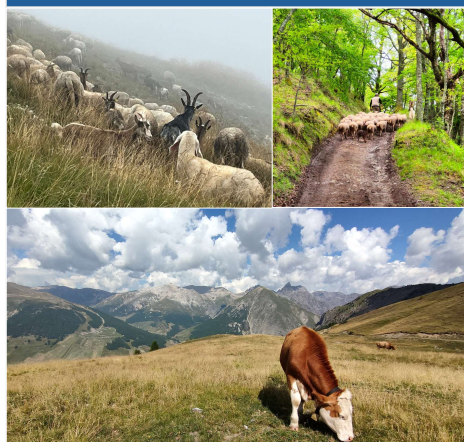


Biomass and forage maps



Smart grazing recommendations

PILOT FARMS



Co-design, testing, and validation with farmers and stakeholders