Sustainable Management of Agricultural Livestock Surpluses: The Living Lab Approach

Vasco Fitas Cruz[1*], Diogo Rezende Coelho[1], Fátima Baptista[1] and José Carlos Rico[1]

[1]MED & CHANGE / Evora University; *vfc@uevora.pt

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Background

Livestock effluents currently represent a surplus in livestock production and their management has significant impacts on animal production systems, particularly in terms of technical operational decisions, profitability, and technical-economic viability.

Although these effluents hold considerable potential for valorization, their use without proper treatment has a strong environmental impact, affecting atmospheric emissions and soil contamination.

About LIVING LAB

The LIVING LAB - Agricultural Livestock Effluents and By-products Project was created to promote integrated solutions for treating agricultural livestock effluents and recovering biogas for energy production.

This project aims to **valorize resources**, addressing various interests converging in the production and proper integrated management of effluents and by-products in agricultural activities, ensuring sustainable development at regional and national levels.

Pilot Experimentation/Demonstration Units will be developed to **transfer knowledge** in the agricultural sector, through applied research and the provision of specialized technical services in a multi-actor environment.

The Pilot Units will work in a top-down logic, according to a 'Living Lab' (LL) model, as dynamic initiatives, adapted to local, regional or national needs.

Operational Objectives

Reduce the pressure of agricultural activity on natural resource utilization.

Reduce disposal costs by transforming by-products into benefits.

Develop new, innovative products, processes and services with added value in a holistic approach.

Project Organization

A1. Treatment:
Application and/or development of processes;

A2. Value:
Evaluation of products/biomasses resulting from different processes;

A3. Monitorization/Automation:
Monitorization/Automation of processes and products, transversal to the entire Project;

A4. Dissemination and Training:
Implementation of a 'Living Lab' with Pilots of Experimental Development and Demonstration for valorization of effluents or co-products of agricultural activity, in a scale up approach with a diversity of partnerships.

This LL Pole will consolidate the implementation of technological solutions for valorization on a semi-industrial scale, to assess the impact of emerging solutions on the different processes to be developed and at different levels: valorization, reduction of GHG and NH3 emissions, circularity of processes and the respective products.

Outcomes

The expected outcomes include demonstrating the scaling-up valorization of agricultural effluents and by-products, contributing to circular agriculture and nutrient cycling.

The LIVING LAB will play a crucial role in promoting sustainable processes and products at various levels, ensuring resource protection and reduced environmental impact.

Partnership

Responsible Institution:
INIAV - Instituto Nacional de Investigação Agrária e Veterinária, I.P.

Partners:
- Cropstore, Lda.
- Farm Control, SA.
- IACA – Associação Portuguesa dos Industriais de Alimentos Compostos para Animais
- IMFlorestal, SA.
- IngredientOdyssey, SA.
- Instituto Superior de Agronomia
- Leal e Soares, SA.
- Tterra – Engenharia e Ambiente, Lda.
- Universidade de Évora
- Universidade de Trás-Os-Montes

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