



GO-GRASS



## Scaling up grass-based products and services

Orozco, R. <sup>1,2</sup>, Mosquera-Losada, M.R. <sup>3</sup>, Rodriguez, J. <sup>3</sup>, Adamseged, M. <sup>1,2</sup>, Grundmann, P. <sup>1,2</sup>

Theme: Bundles of services provided by grasslands

1. Department of Technology Assessment and Substance Cycles, Leibniz Institute for Agricultural Engineering and Bioeconomy (ATB), Potsdam, 14469, Germany.
  2. Department of Agricultural Economics, Berlin Workshop in Institutional Analysis of Social-Ecological Systems (WINS), Humboldt-Universität zu Berlin, Berlin, 10117, Germany;
  3. Department of Crop Production and Engineering Projects, Universidade de Santiago de Compostela, Lugo, 27002, Spain.
- Correspondence: ROrozco@atb-potsdam.de ; mrosa.mosquera.losada@usc.es



Sociotechnical Systems  
and Institutional Change





GO-GRASS

## Background & Motivation

- Grasslands represents 21% EU land and 50% AA and have been increasingly abandoned or underutilised (Mosquera et al., 2019)
- The GO-GRASS project will develop a set of small-scale bio-based solutions to unlock the potential of grassland across Europe and create new business opportunities for rural areas.

biofertilizer

biogas

paper

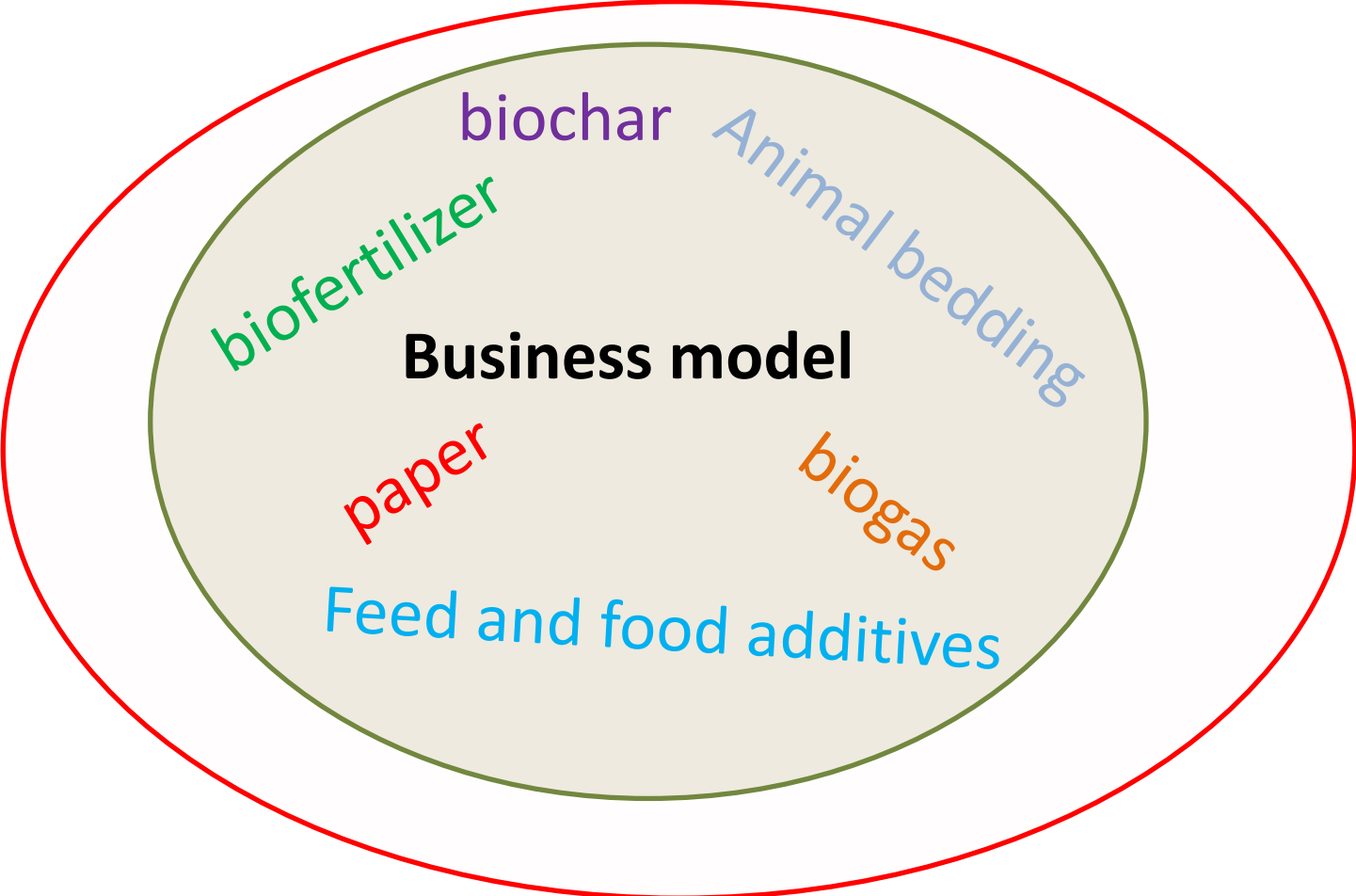
Animal bedding

biochar

Feed and food additives



# Business environment



**Business model**

biochar

Animal bedding

biofertilizer

paper

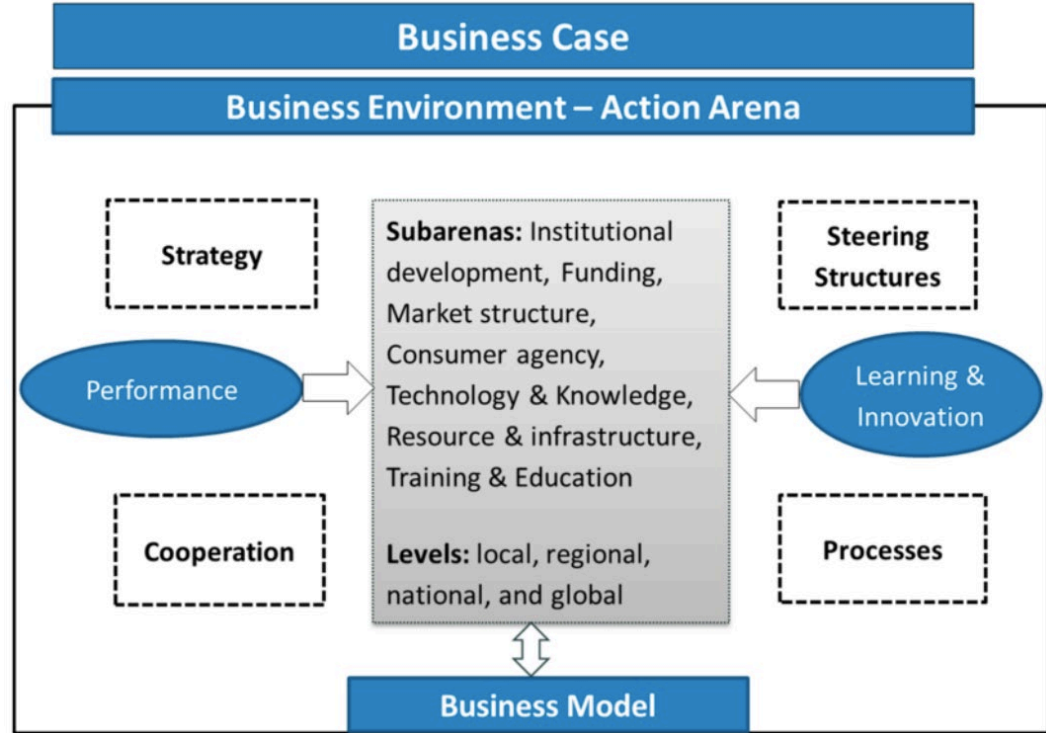
biogas

Feed and food additives



# Analytical Framework

- **Business environment** refers to the **external factors** which directly or indirectly **affect the performance of the business**
- Enterprises and their business models are shaped, constrained and/or enabled by their business environment **through manifold interactions**



Adamseged & Grundmann 2020



# Materials & Methods

- **Multiple Case Study Approach (6 countries)**
- Cases selected operate with grass as their main feedstock but exhibit diversity in terms of contextual conditions, conversion processes, end-products and users.

**Table 1. Overview of alternative grass-based products in Europe (n=18)**



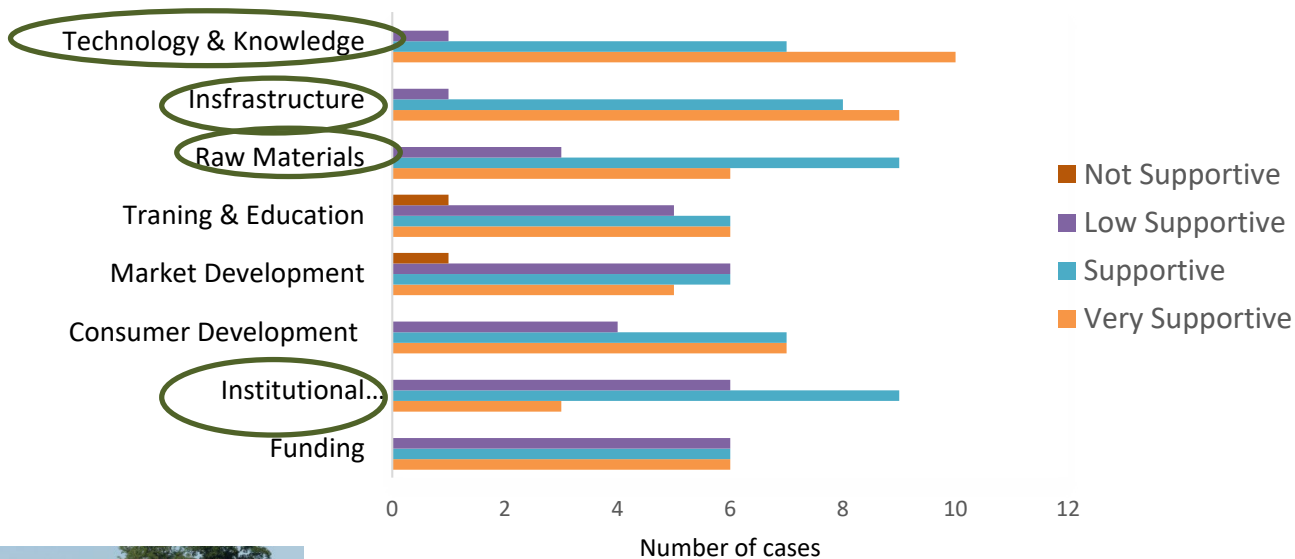
**GO-GRASS**

| Grass-based product                      | Location                              | Case ID      |
|--|---------------------------------------|--------------|
| Paper                                    | Germany, Romania                      | 1,2,7,10     |
| Fiber Boards (Construction & Insulation) | Germany, Switzerland                  | 1, 14        |
| Straws                                   | Germany                               | 1            |
| Fertilizer (Soil Amendment)              | Netherlands, Romania                  | 4, 11        |
| Plastic                                  | Germany                               | 5, 16, 17    |
| Feed Protein                             | Denmark, Netherlands                  | 6, 15        |
| Bioenergy                                | Germany, Romania, Netherlands, Sweden | 8, 9, 15, 18 |
| Seeds                                    | Denmark                               | 13           |



# Summary & Key Findings

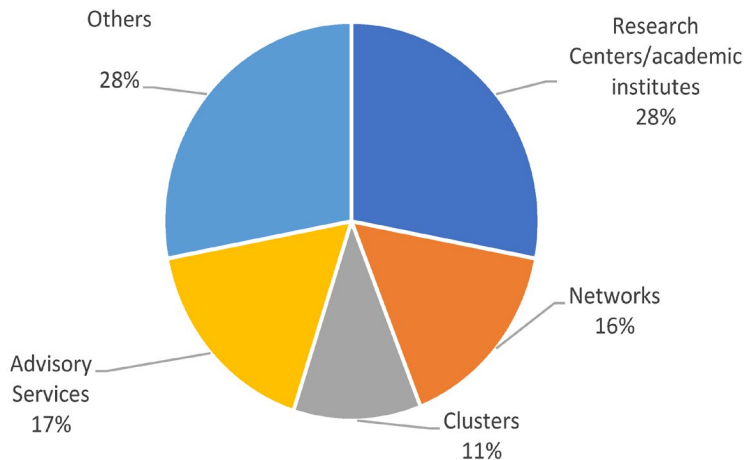
Figure 1. Business environment support for grass based businesses per sub-arena (n=18)



# Key Findings

## Technology & knowledge

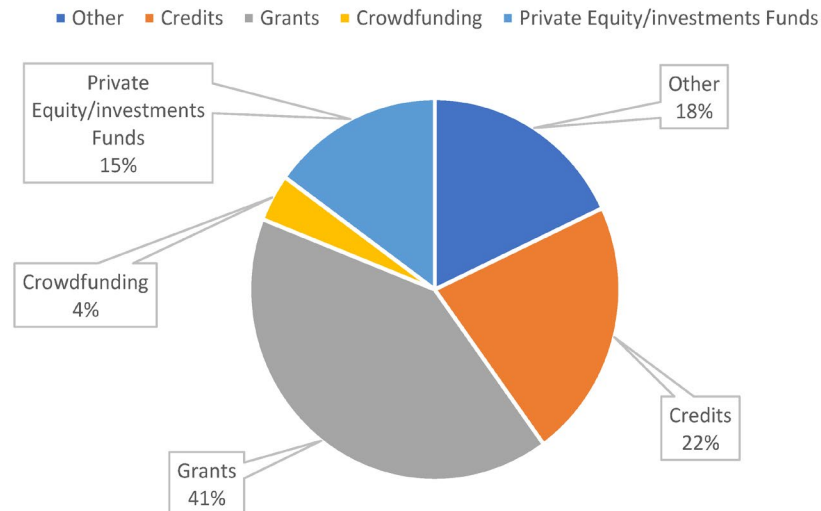
Sources of support for technology and knowledge for grass-based businesses



## Financial resources for institutional development, raw material and infrastructures

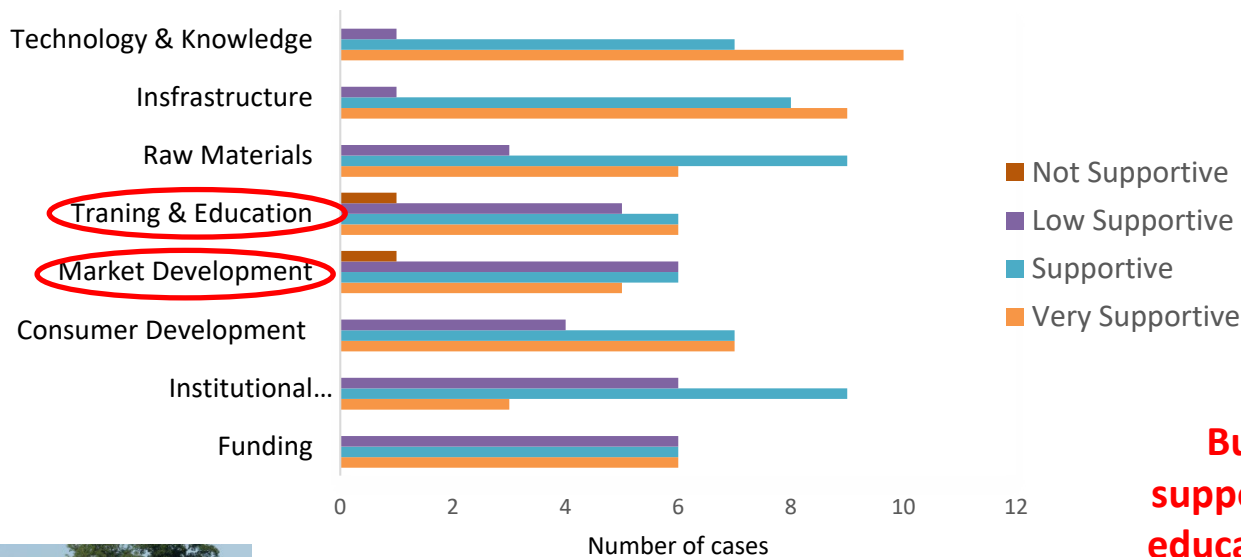


Sources of funding for grass-based businesses



# Summary & Key Findings

Figure 1. Business environment support for grass based businesses per sub-arena (n=18)



**Businesses lack support on training & education and market development**





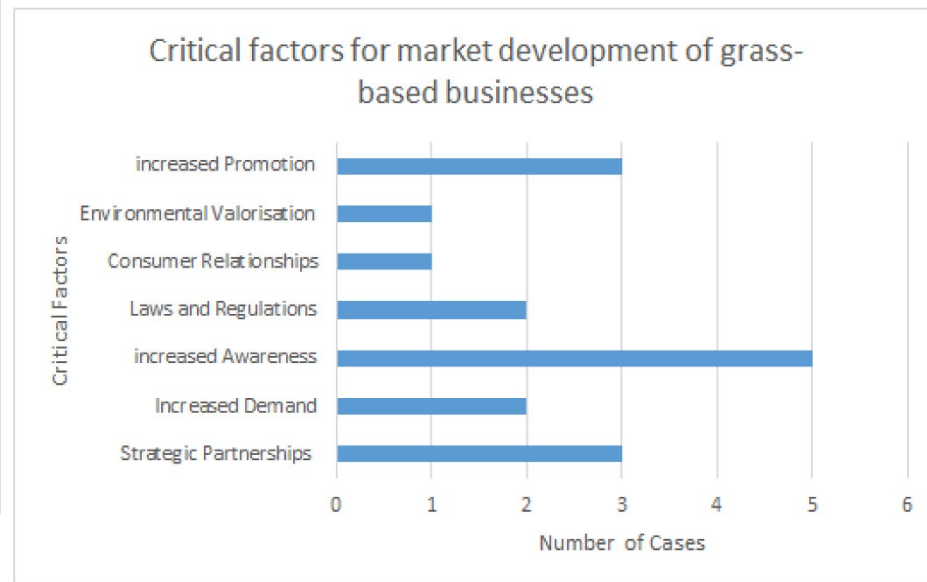
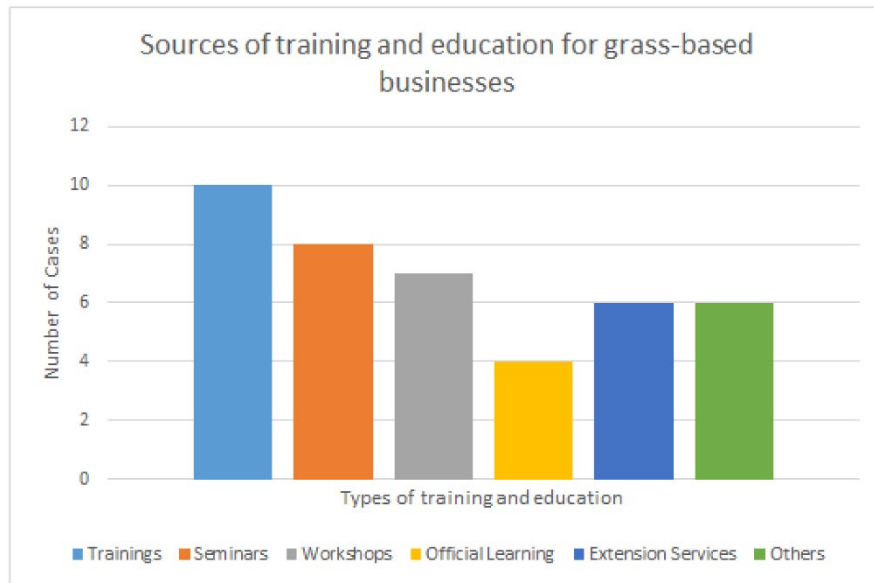
# Key Findings



GO-GRASS

## Training and education mostly unofficial

## Market development





GO-GRASS

## Conclusions

- ❖ With the expected climate change and increased emphasis on sustainable agriculture, it can be expected that services, goods, and functions of grasslands will become more important.
- ❖ A key challenge for grassland farming is to design production systems and management measures in such a way that the multiple functions and services are adequately fulfilled or provide.
- ❖ The growing significance of grasslands underlines the necessity of further qualitative and quantitative research on the co-evolution of emerging grass-based businesses and their business environments.





GO-GRASS

## Recommendations

**Businesses** should **take into account the region of Europe** where it is going to be established, as this fact **determines the grass availability and quality** associated with conditions of the natural environment.

Consider the **potential competition** with current grass-based products associated **with livestock production** and the existing infrastructure.

**Capacity building** and **innovation programs**, such as those linked to the EIP-AGRI, are required to foster an **adequate environment** for researchers and entrepreneurs **to innovative**.

**Cost-effectiveness** of grass-based businesses should be facilitated through **consumer awareness** campaigns and **adequate funding mechanisms** to balance the competition with the established fossil-based economy.





GO-GRASS



THANK YOU!



Sociotechnical Systems  
and Institutional Change



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 862674