



# EU CAP Network Seminar 'Smart circular farming to address high energy and fertiliser prices'

6-7 December 2022  
Porto| Portugal



Funded by  
the European Union

# GO-GRASS

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# Grass-based circular solutions for rural agri-food value chains

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EU-GAP Network Seminar "Smart Circular Economy to cope with high energy and fertiliser prices", Porto, 6 - 7 December



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





# Background & Motivation



Source: Eurostat; EU-28 countries; 2015

## Green Deal & Bioeconomy Strategy Action Plan

- **Increasing biomass use efficiency** and enhancing the **ecosystem services** provided
- **Reducing imports and dependency on fossil fuels**
- **Providing inputs for farming and biobased industries**
- **Replicating bio-based circular business models** with relatively low levels of investment, risk and technical sophistication.



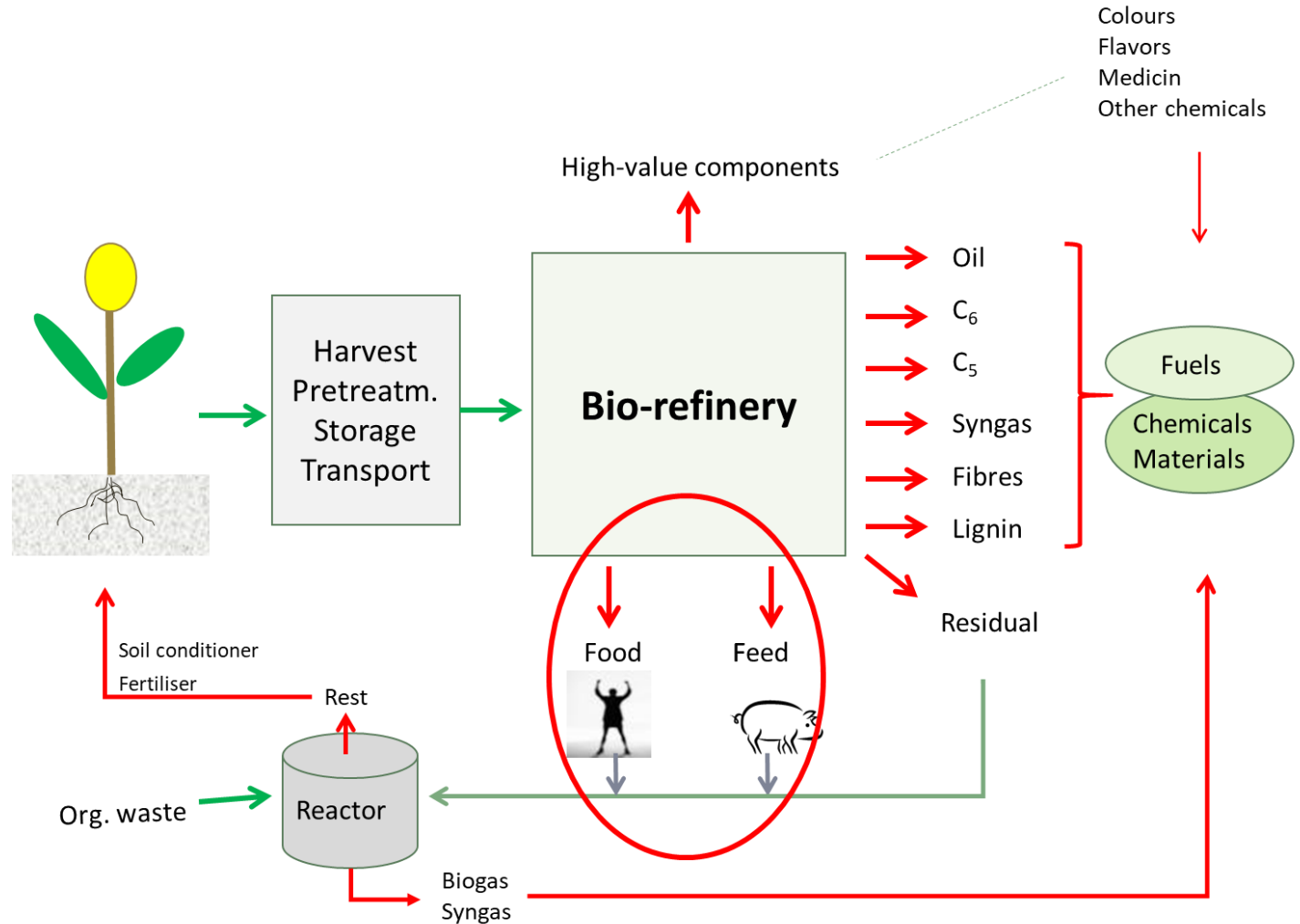




# Green biorefineries as the disruptive agent for new products from rural areas



Picture: Demo-plant for green biorefinery now paving the way for market introduction





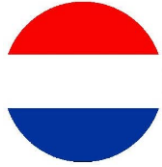
# Highly diverse demonstration sites



Biochar



**Carbonisation of late-harvest grassland cuttings**



Paper & Packaging



**Fiber extraction from roadside and nature conservation grasses**



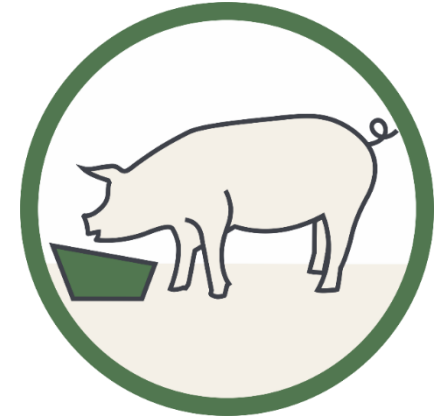
Bedding Material



**Briquetting technology for Reed Canary Grass**



Organic Protein



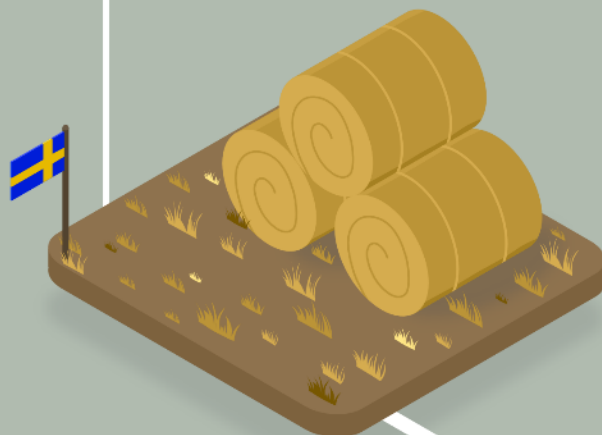
**Farm-scale green biorefinery from fresh grass**



# Animal bedding - farm-level production

## REED CANARY GRASS

Perennial grass that grows across many different soil types and climate regions



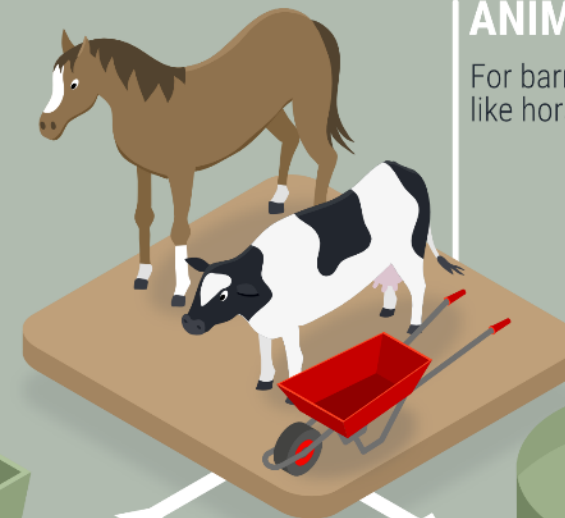
## BRIQUETTING TECHNOLOGY

Heat-treated briquetting  
Shredding  
Packaging



## ANIMAL BEDDING

For barn & stable animals like horses or cows



## ADDITIONAL SIDE STREAMS

Fertiliser or biogas





# Biochar - valorising low nutritional grass

## PERIODICALLY WETLAND GRASSES

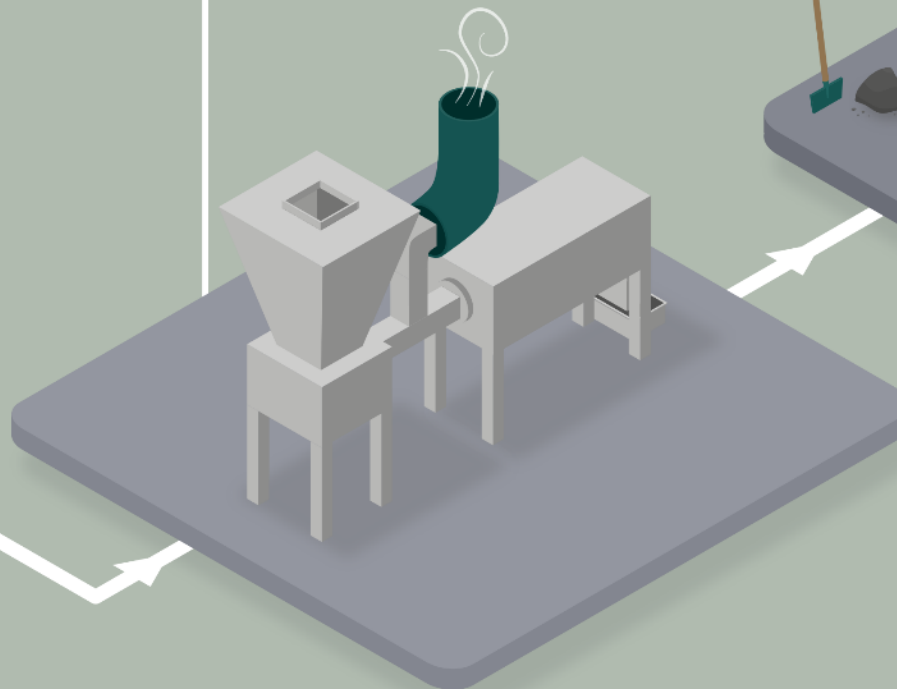
Late harvest due to bird protection measures of the national park

Strongly lignified grasses with low nutritional value



## PYROLYSIS & HTC

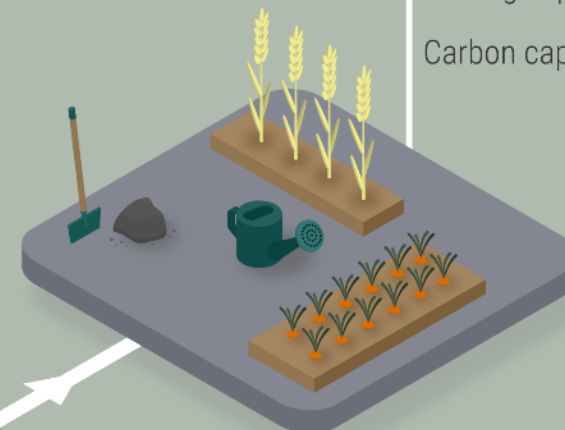
Conversion of organic matter into carbon (carbonization)



## BIOCHAR

Site-specific soil amendment to increase fertility and water holding capacity

Carbon capture & storage



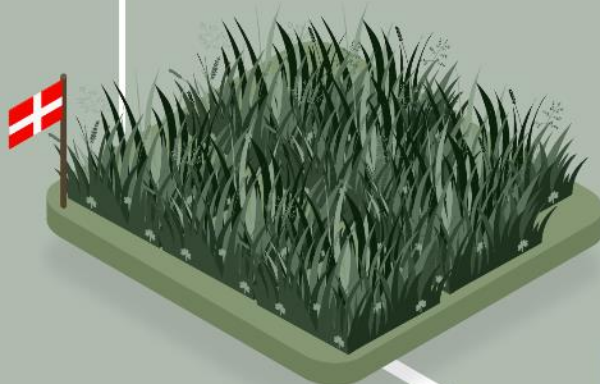




# Grass protein - sustainable animal feed

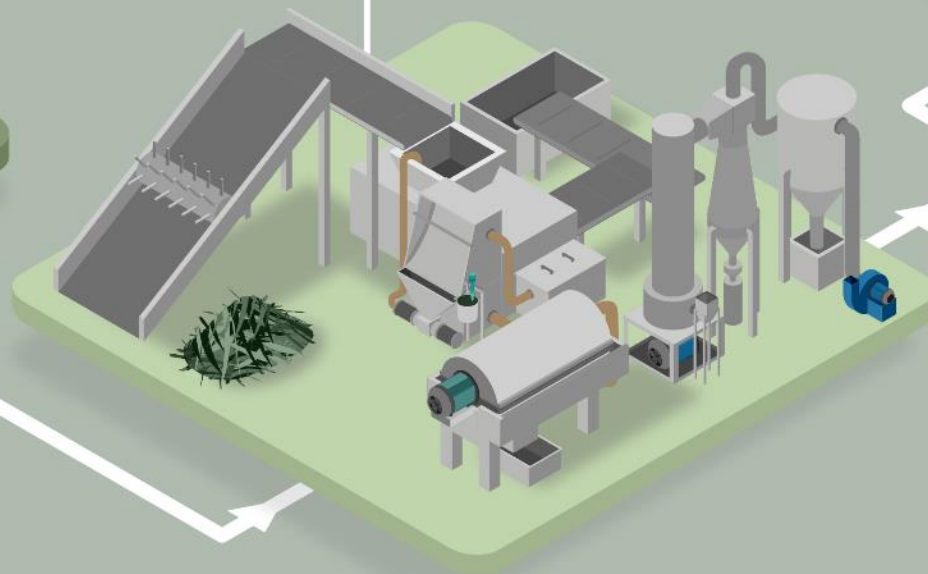
## NITRATE SENSITIVE GRASSLANDS & REWETTED PEATLANDS

Freshly harvested grass should be processed quickly



## GREEN BIOREFINERY

Cutting  
Pressing  
Centrifuging  
Drying



## GRASS PROTEIN POWDER

Feed for monogastrics and poultry



## ADDITIONAL SIDE STREAMS

Fibrous pulp: ruminant feed, biomaterials & bioenergy  
Brown juice: fertiliser



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# Follow our journey!



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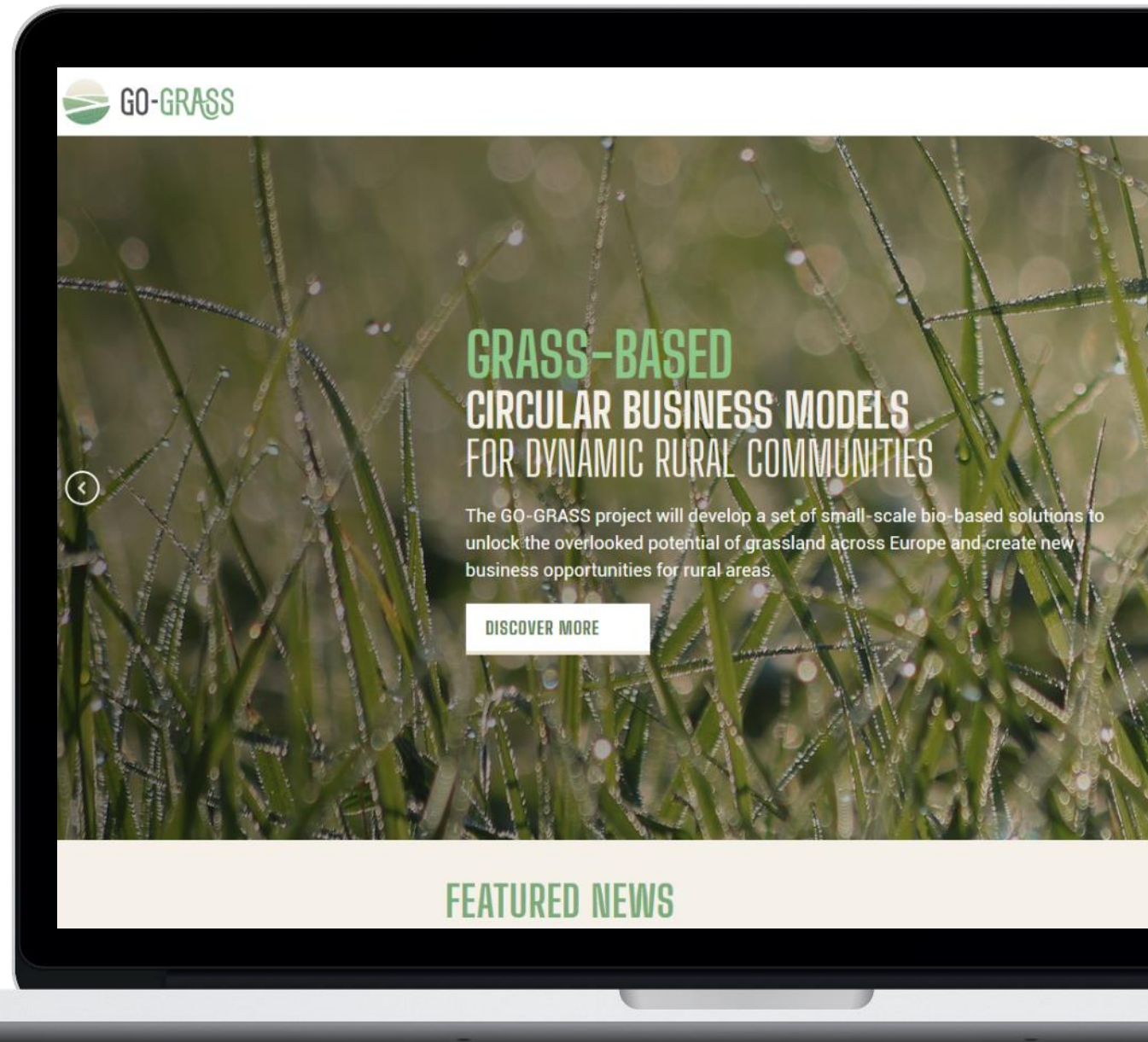


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# 20+ Partners

