



# GO-GRASS

Grass-based circular business models  
for rural agri-food value chains

**SWEDEN: Local, heat treated, quality assured reed  
canary grass animal bedding increasing circularity**

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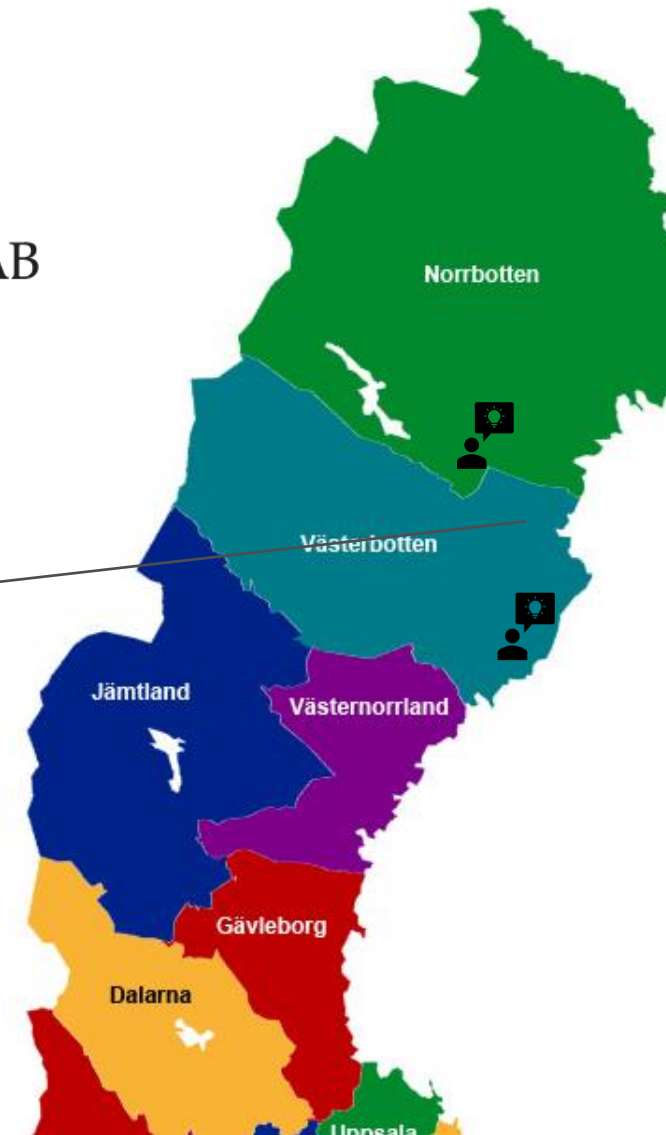




# Partners and location



Photo Kulbäcksliden





# Animal bedding from Reed Canary Grass-why?

- More extreme dry or wet weather leads to unstable supply of straw for animal bedding.
- Long transportations of animal bedding material from different regions has a negative effect on the environment and increases costs.
- The demand for wood-based material increases.
- Need for new animal bedding solutions in barns and stables.







# Abandoned farmland

- Sweden has large areas of fallow land and abandoned farmland, specially in north Sweden.
- A potential crop is reed canary grass
- There is a value in keeping the landscape open in rural areas.







# Reed canary grass

- Reed canary grass – RCG is a perennial about two-meter-high grass.
- RCG can provide a good return on most different land types.
- Common hay harvesting machines can be used to harvest and bale RCG in the spring.
- After baling it can be processed to animal bedding.







# Animal bedding process



Bale shredding-dosing bin-briquetting-transport-gentle shredding to a soft material



# Packaging



Packaged in small bales, in big bags or in containers depending on the customer





# Two Swedish Demos

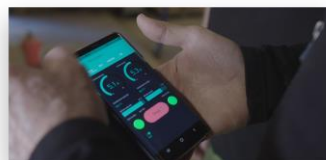
## Production chain in Glommersträsk

- Bigger production plant
- A mobile production plant
- Integrated with production of wood pellets (staff available)



## Production chain in Umeå

- Smaller production plant (farm scale)
- Stationary plant
- Need to be more automated







# Animal-bedding Customers

- Owners of animals such as cattle, horses, chickens and pigs.

Focus on two groups

- Horses-more horses than cows in Sweden.
- Dairy farms with biogas production.





# Increase the value of the manure

- An argument for switching to reed canary grass animal bedding is an increased value of the manure.
- Manure from many horse stables is not used as fertilizer today
- Much wood-based animal bedding material is used
- It is a cost to get rid of the manure
- Animal bedding from reed canary grass can be returned to the field after use
- The manure can also be used for biogas production







# Testing in a dairy farm

- The bedding material tested for 3 months at Kulbäcksliden farm.
- Normally wood shavings are used
- Easy to use, spreads evenly across the floor
- Tendency to get stuck in the split floors
- The amount of bedding material has increased slightly
- Dust is formed at some handling moments







# Biogas production

- The biogas plant works technically well with the RCG manure.
- Gas production increased from about 525 m<sup>3</sup>/day to about 630-650 m<sup>3</sup>/day.







## Next step in the Swedish demo

- Dust issues need to be solved
- The packaging and loading of bags
- Streamline the process and reduce work effort
- More testing of bedding material to get more opinion from potential customers
- Develop the business model





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