

SIRR

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All onboard in rural
societies for a fair
future!

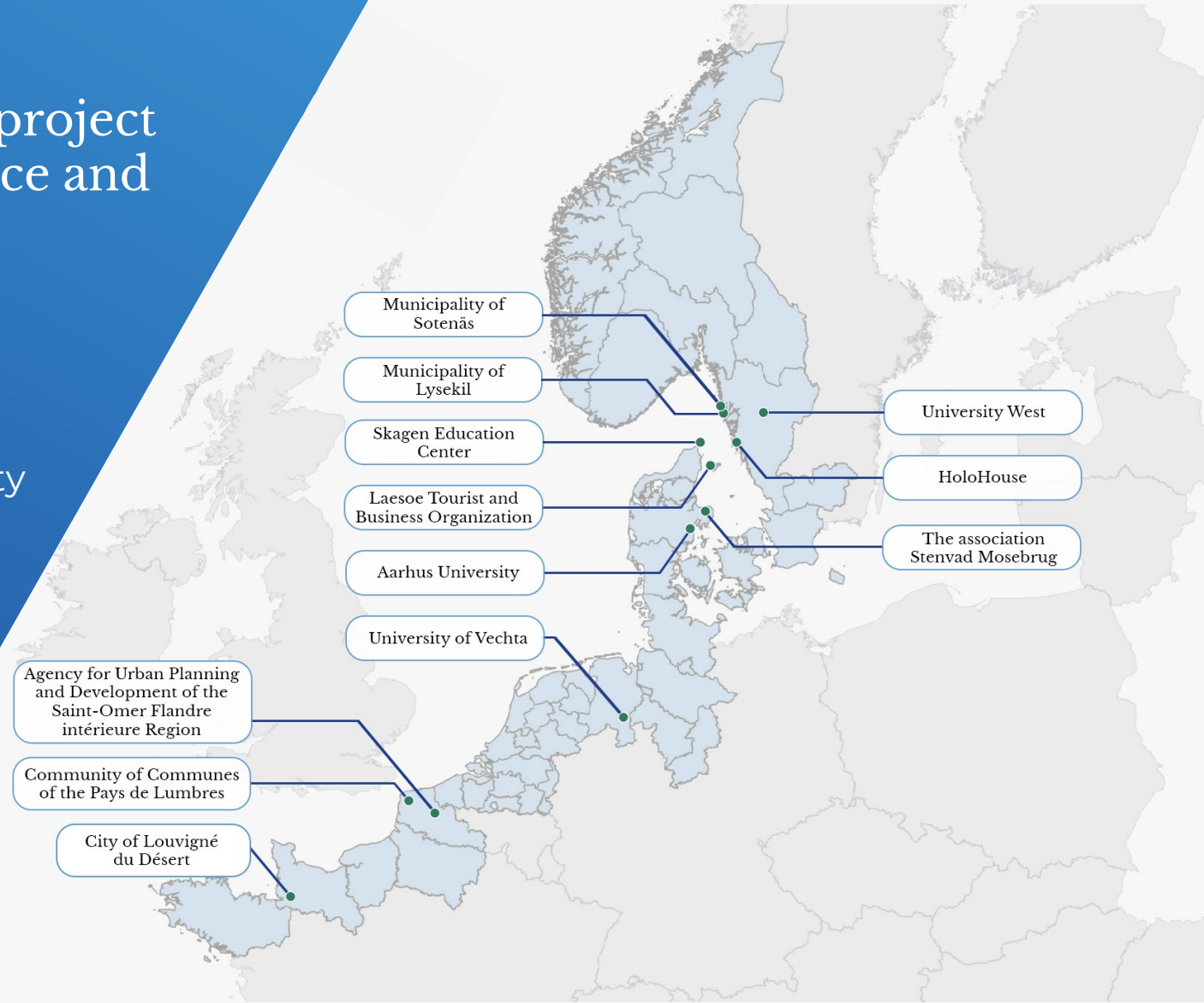
Presentation & Talk 25/10 2024





An Interreg North Sea Project with project partners in Sweden, Denmark, France and Germany

We develop **Multi Helix Hubs in rural and coastal areas**, as innovation centers or platforms, to bring all actors in the local society together to face local challenges with sustainable and resilient solutions, and to strengthen the local cohesion





WHY IS SIRR NECESSARY?

With more people moving to cities, rural areas struggle to keep their communities and businesses thriving. SIRR supports and shape local efforts to innovate and stay resilient.

HOW DOES SIRR WORK?

Through collaboration, the project seeks to create social innovative interactions throughout coastal and rural areas.

Website: www.interregnorthsea.eu/sirr



A woman with long blonde hair, wearing a light blue blazer, is smiling warmly. She is in a meeting with other people, one of whom is partially visible on the left wearing glasses. The background is a bright, out-of-focus office setting. A semi-transparent dark grey box is overlaid on the image, containing white text. In the bottom right corner, there is a white line-art graphic of a network or map with circular nodes and connecting lines.

All onboard in rural societies for a fair future!



Circular Biorefinery and Green Protein - Project Insights

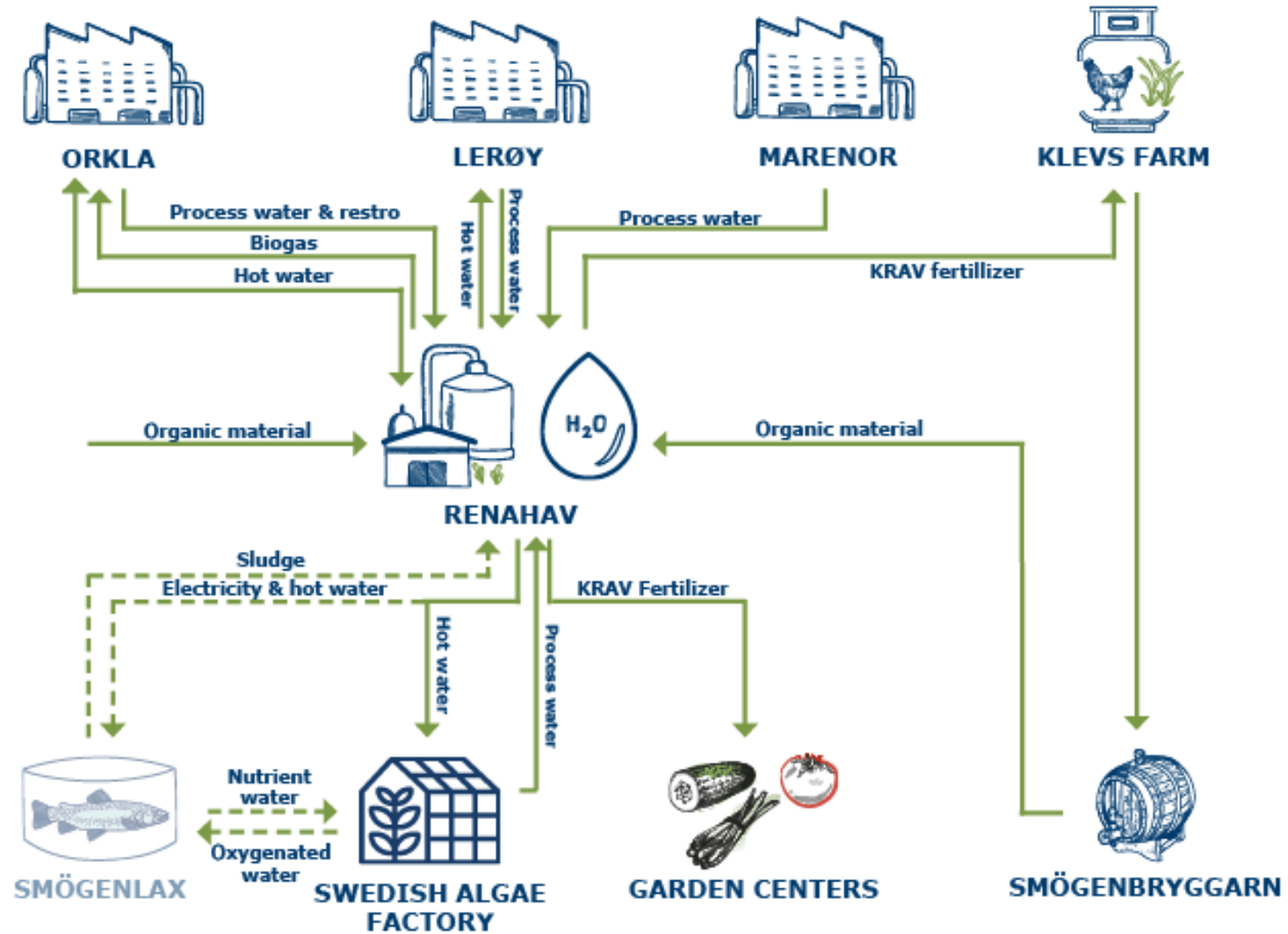
Stina Gottlieb, Sotenäs Municipality

Grassland-based biorefinery

Local production of
protein, fibre and energy
with a focus on climate,
self-sufficiency and
preparedness

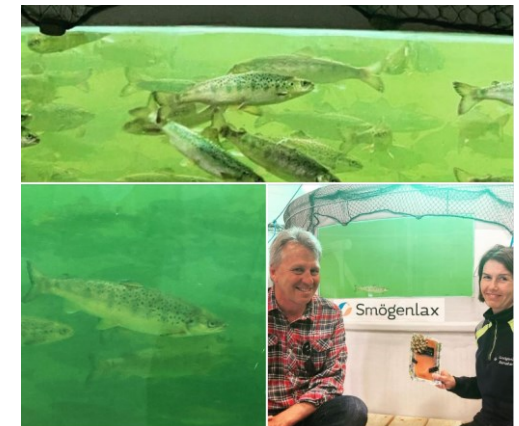


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10-12 years after the first symbiosis sketches

Local growth, new companies and new ideas

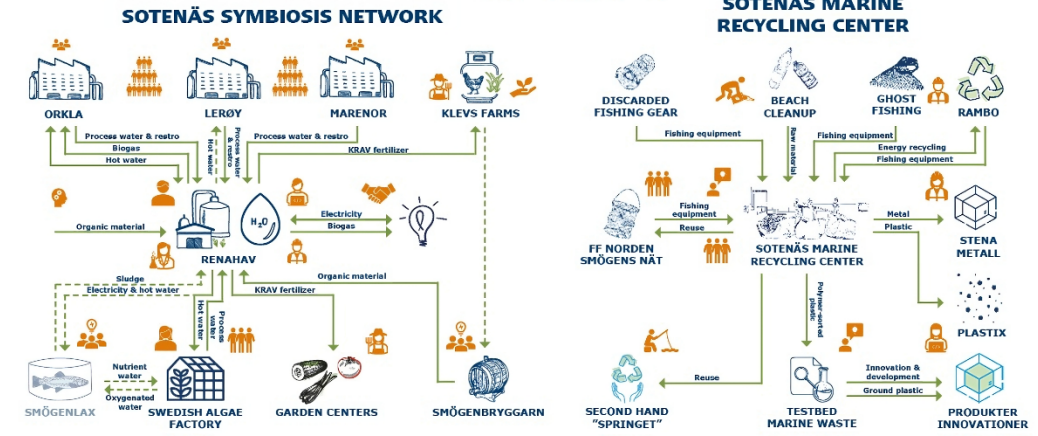


Symbiosis creates opportunities!

- People, people, people
- Solve obstacles by finding the opportunities
- Innovation fosters more innovation
- Connects marine food industry to farming
- Creates local resilience
 - Energy, fertilizers, food
- Achieves the Green deal!



CENTER OF SYMBIOSIS
KNOW HOW - FACILITATOR - KATALYSATOR



The municipality's role

- Social symbiosis
- Neutral platform for the symbiosis network
- Land, building permits and detail plans
- Can function as link to the innovation system
- Can coordinate development projects
- Link to strategic actors and networks
- Offer coffee!



Foto: Bohuslänningen

The company's role

- Industrial symbiosis
- The companies support & own the symbiosis flows
- Stable deals/agreements regarding resource flows
 - The forerunners and those who take the risks
- Break the linear mindset
 - Go from waste costs to resource thinking
 - Build smart and sustainable businesses
 - Branding that enables future resilience
 - Answers to the consumers and employees new demands

Why symbiosis is important for a municipality

- Innovation occurs in a small rural municipality
- Symbiosis attracts external companies
- Attracts research and development
- Our companies are front runners in the green transition
- Show that Sotenäs is a dynamic municipality to live and work in
 - The countryside is fighting for the sustainable companies and creative residents
 - Municipalities must be able to offer something that stands out



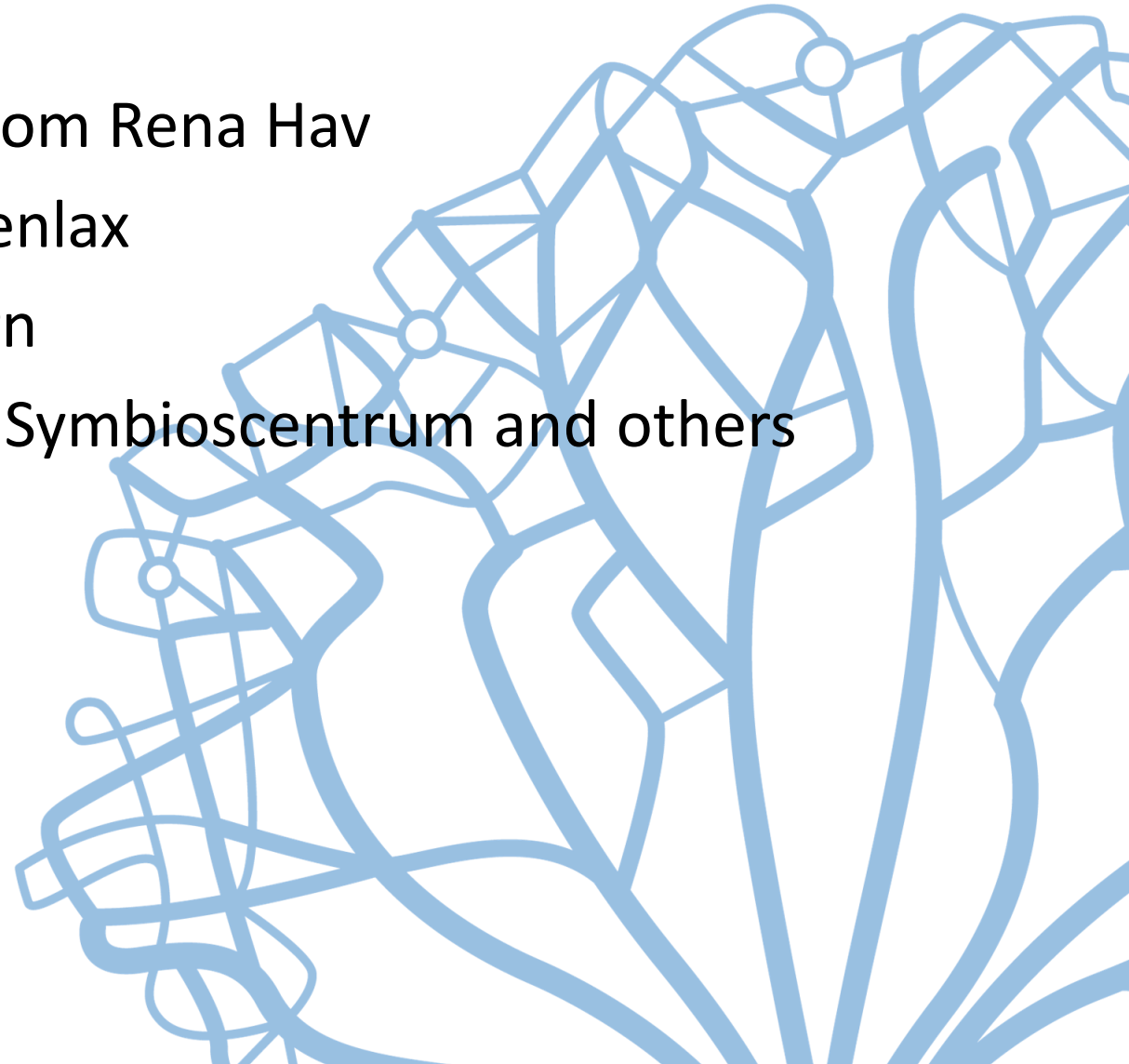


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Today's symbiosis collaboration

- Approx. 17000m³ of biofertilizer from Rena Hav
- Feed project with Rena Hav/Smögenlax
- Collaboration with Smögenbryggarn
- Food waste project with Rena hav, Symbioscentrum and others



Background to protein factory

- Possible sale to fish feed
- Agriculture in Bohuslän is extensive with many hectares of uncultivated/extensively cultivated land.
- Grass and other "forage plants" are the crops that deliver among the highest yields in Bohuslän.
- Grassland works better than grain on less fertile land.
- The ability to pay for grassland is limited.
- Grass is the best crop for variety.



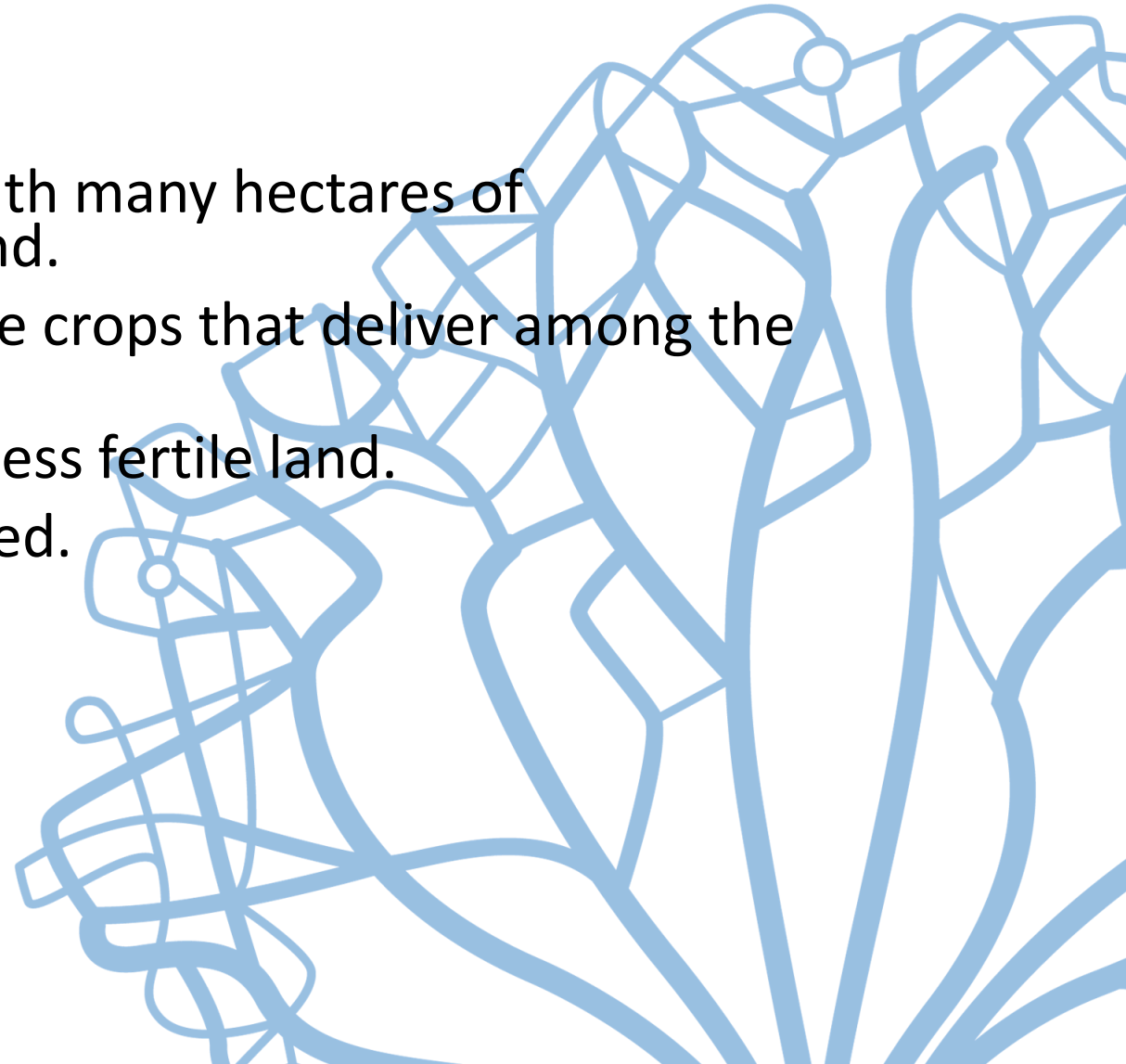
Sotenäs
kommun



KLEVS GÅRD
BOVALLSTRAND

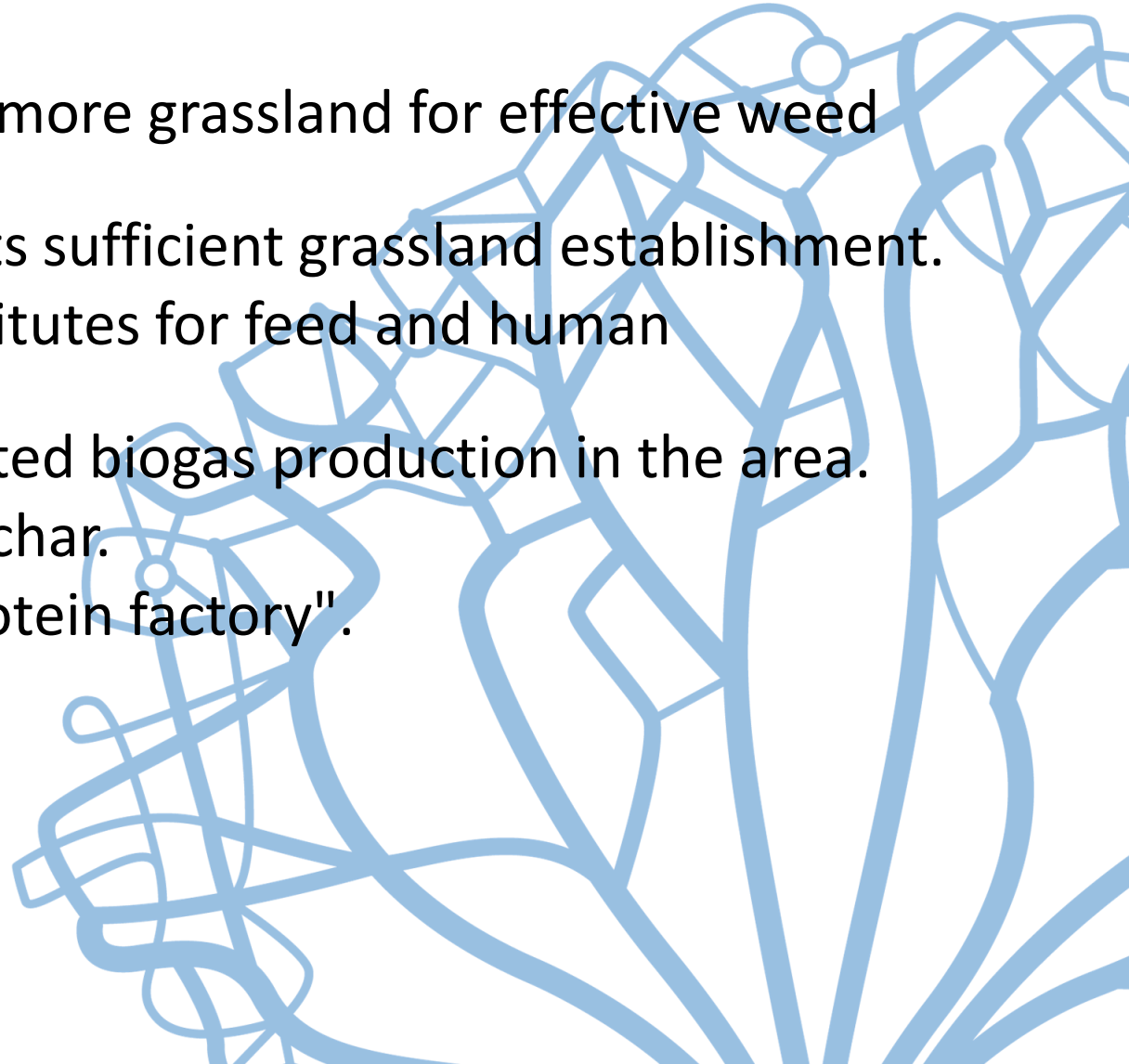


Europeiska jordbruksfonden för
landsbygdsutveckling. Europa
vesterar i landsbygdsområden



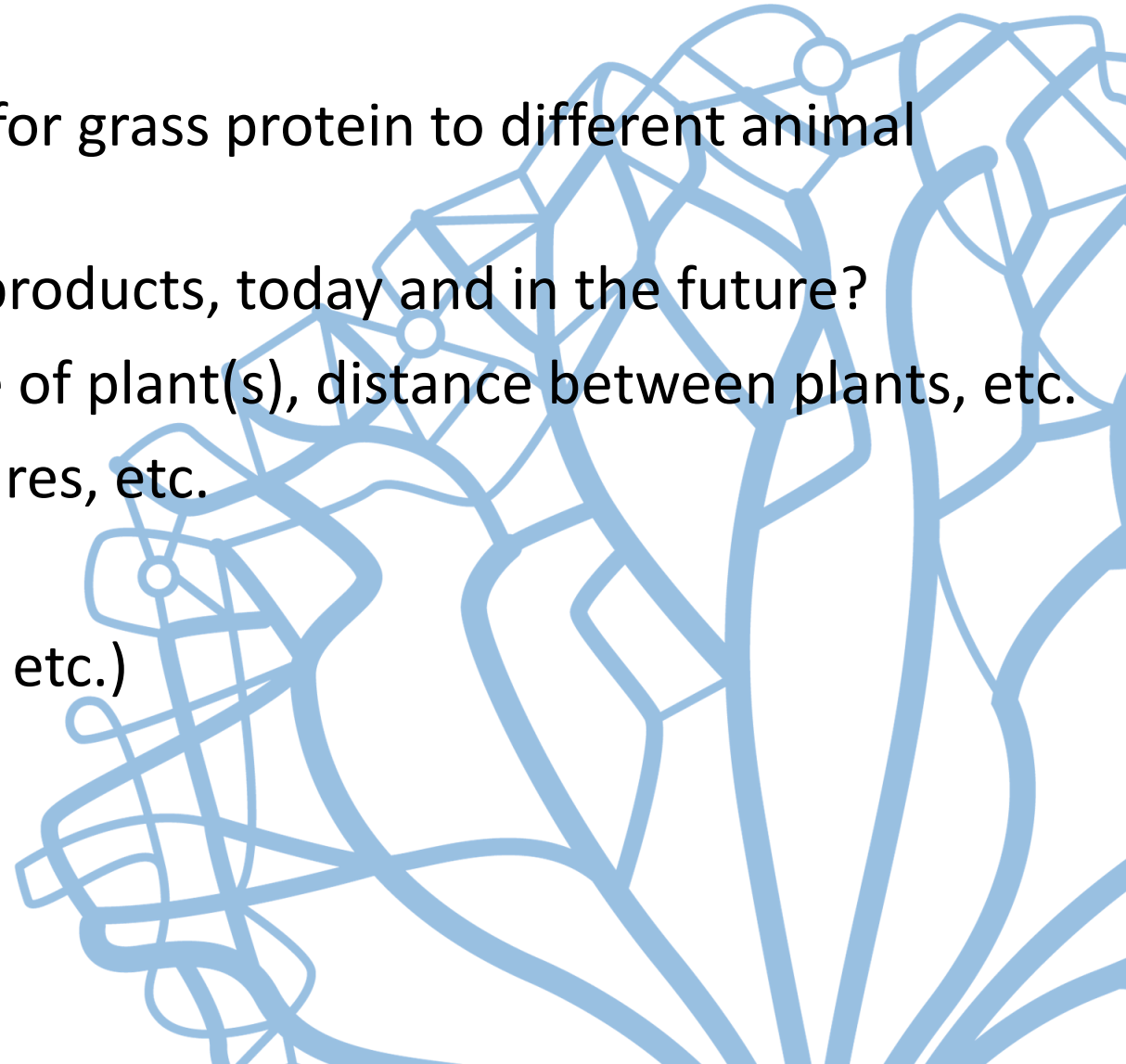
Background (cont'd)

- Organic crops cultivation is in need of more grassland for effective weed control and better crop rotation.
- A small set aside for grassland prevents sufficient grassland establishment.
- There is a great need to find soy substitutes for feed and human consumption.
- Opportunities with large-scale integrated biogas production in the area.
- Opportunities for integration with biochar.
- Studied "Green Valleys" and "Plant protein factory".



Questions and ideas to investigate

- What are the application possibilities for grass protein to different animal species?
- What are the outlets for the residual products, today and in the future?
- Investigation of optimal structure, size of plant(s), distance between plants, etc.
- Harvesting systems, forage seed mixtures, etc.
- Financial calculation
- Certifications (EKO, carbon sink rights, etc.)



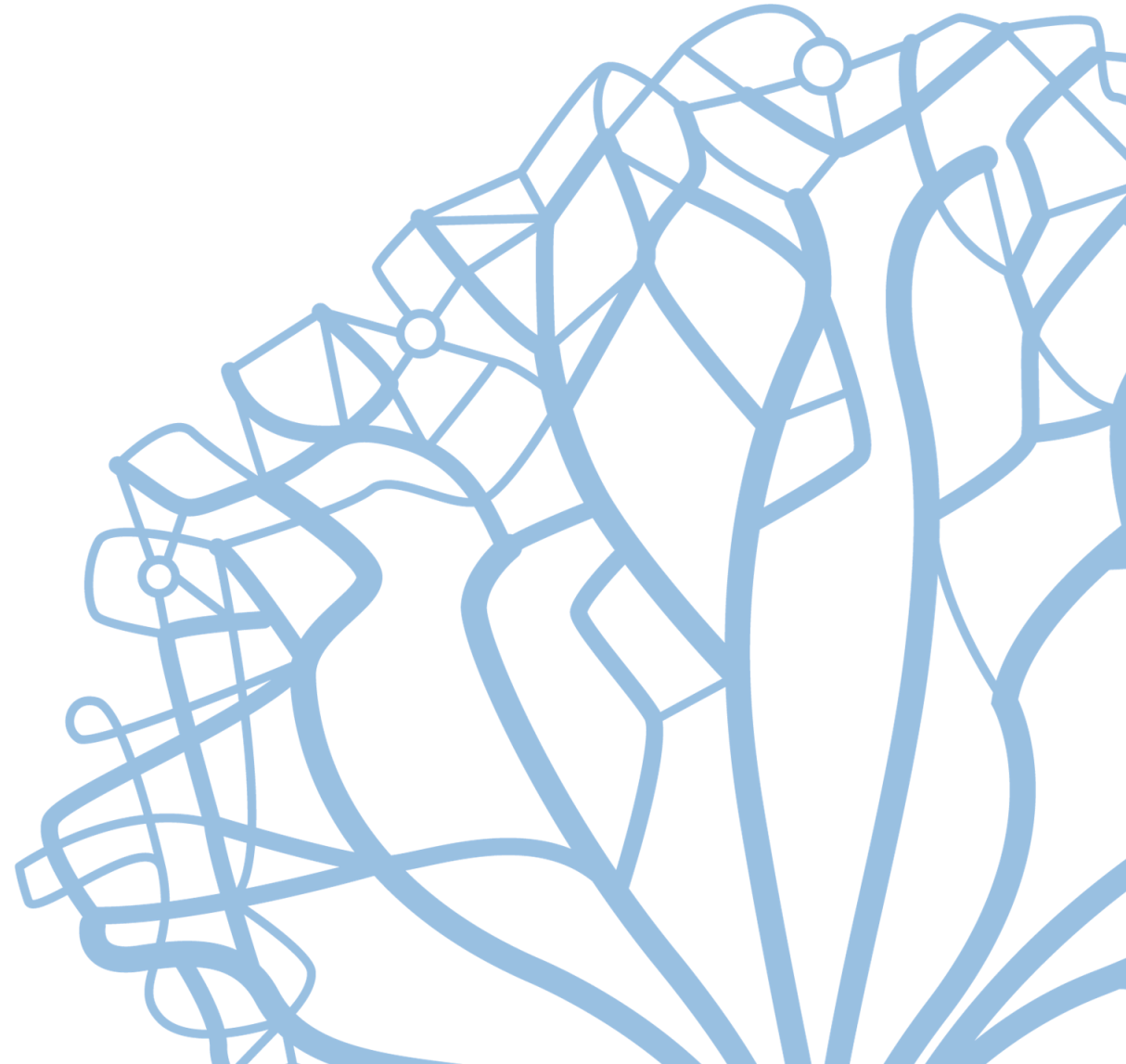


Bred last



Movie time!

- [Vallbaserat Bioraffinaderi](#)



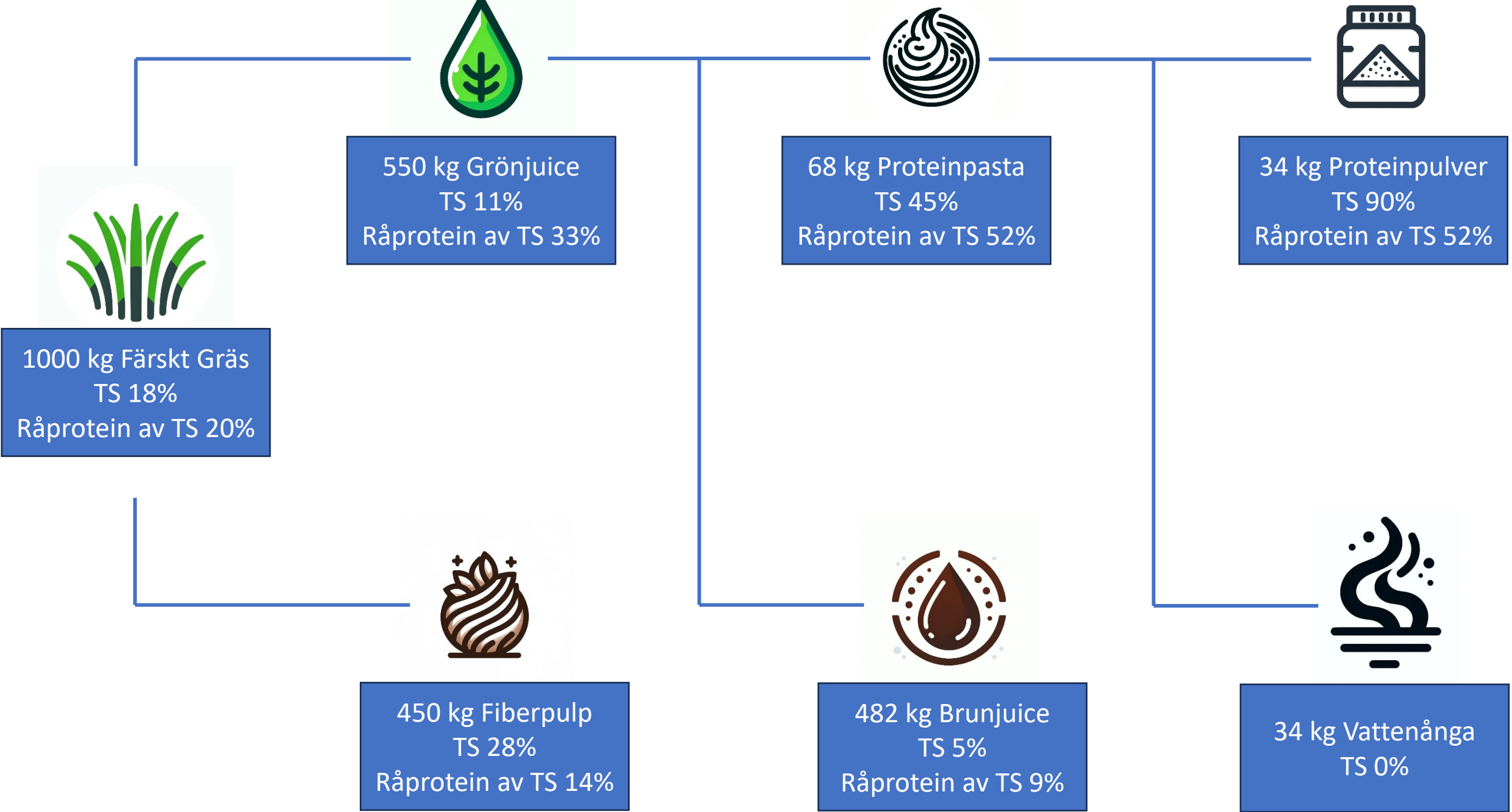
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The project "Establishment of circular and grassland-based biorefinery in Northern Bohuslän"

- Funded by the Swedish Board of Agriculture, collaboration with Green Valleys
- Feasibility study for a larger pilot plant in Sotenäs municipality
- Parties: Sotenäs municipality, Klevs Gård, Chalmers and external consultants
- Two-year project, end Nov -24



Reduction of greenhouse gases

- Cultivation
 - Electrified harvesting and transport
 - Reduced tillage by about 50%
 - Reduced mechanical weed control by about 75%
 - Increased carbon sequestration with increased grassland cultivation
 - Miscellaneous emission reductions linked to manure spreading and reduced soil compaction.
- Substitution of soya imports and substitution for meat protein
 - Protein is a big issue to deal with!
- Production of fibre for anaerobic digestion or material production, replacement for fossil raw materials.



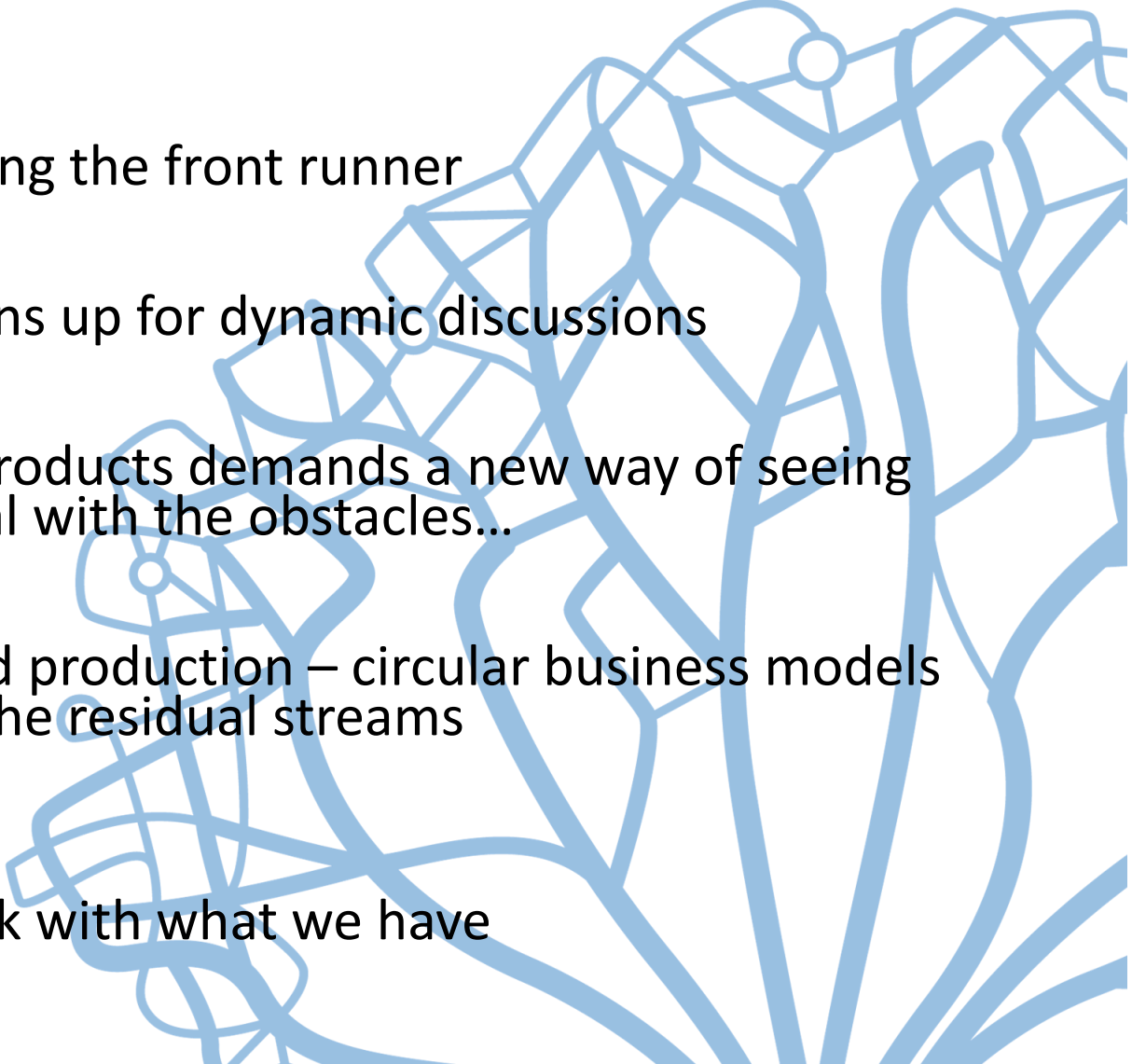
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Summary

- Raising cereal crop yields
- Reduce fertilizer use
- Reduce CO2 footprint per amount of biomass produced
- Dealing with problem weeds
- Reduce tillage in crop rotation
- Reduce phosphorus load
- Creating better soil health



Reflections

- The potential is huge – but it is difficult being the front runner
 - Public-private partnerships in projects opens up for dynamic discussions
 - Turn low-value resources into high-value products demands a new way of seeing opportunities, at the same time as you deal with the obstacles...
 - Find profit from all ends of the product and production – circular business models depend on also being able to profit from the residual streams
 - Otherwise the profit gets to low
 - We need to get more self-sufficient and work with what we have
- 



Thank you!

