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

Grass-Based Circular Business Models

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1. What is a business model?

A business model is a framework that outlines how a company creates and captures value through its operations, customers, and revenue sources.

Basically, it is a description of how you sell and deliver your solution to your customers

→ *and make money!*

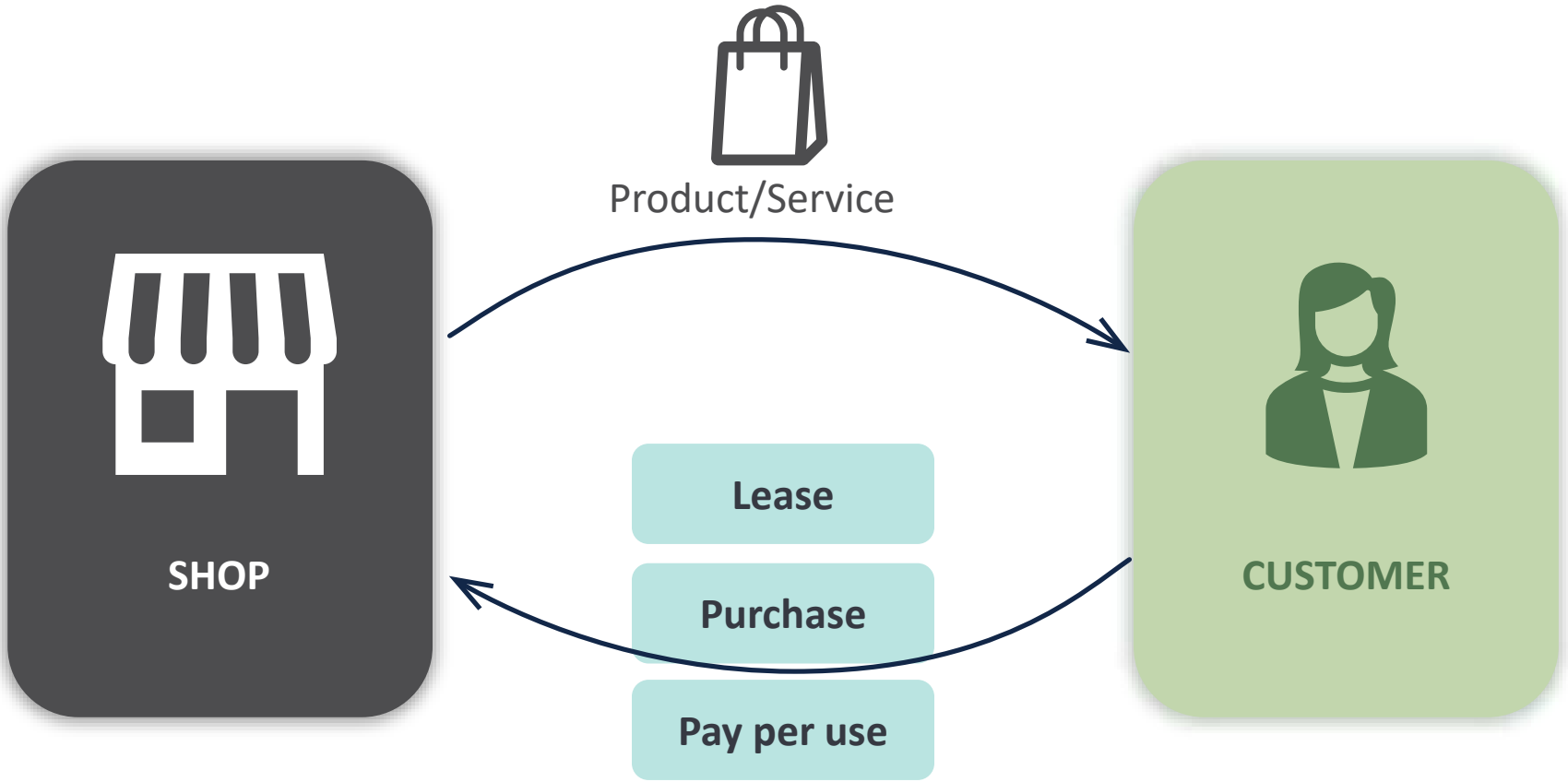
Business model vs product

→ *which one will give you a competitive edge?*

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

A simple business model

… with variations



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The importance of business models

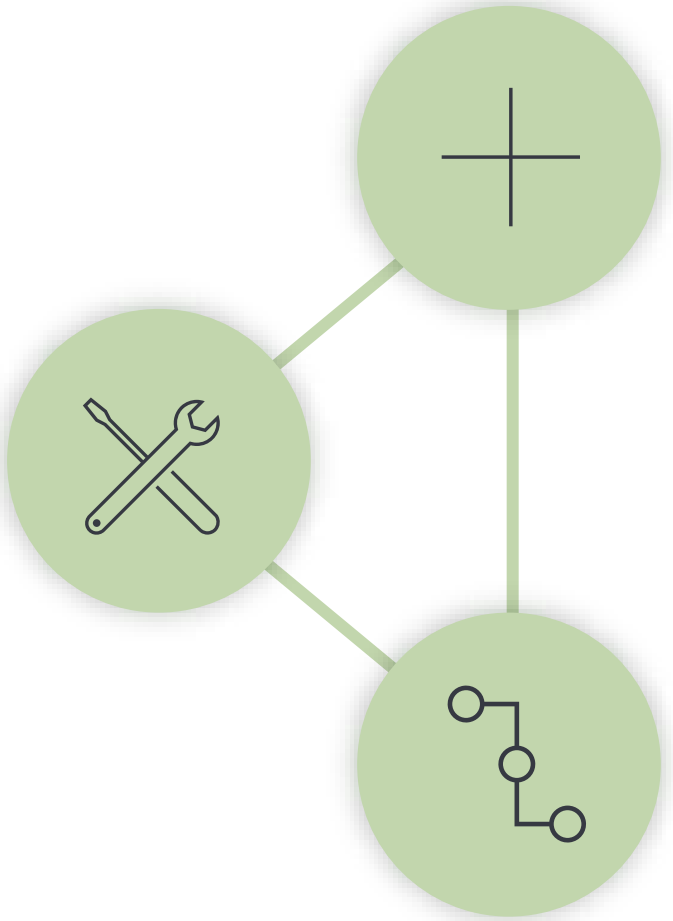
Successful business models are often based on the right combination of several linked elements.

The briquetting technology in the Swedish DEMO

- → Optimized with other technologies

  (e.g. grass shredding, briquette shredding)

- → Connecting existing infrastructure
- → Modifying equipment



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Circularity

Minimizing ecological and social costs

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3 Fundamental principles

1. Source from the economy

   → *not from ecological reserves*

2. Add value to existing products and materials

   → *Combination of technological and design processes*

3. Create valuable inputs for businesses

   → *If the product you sell has no value, it will become waste*

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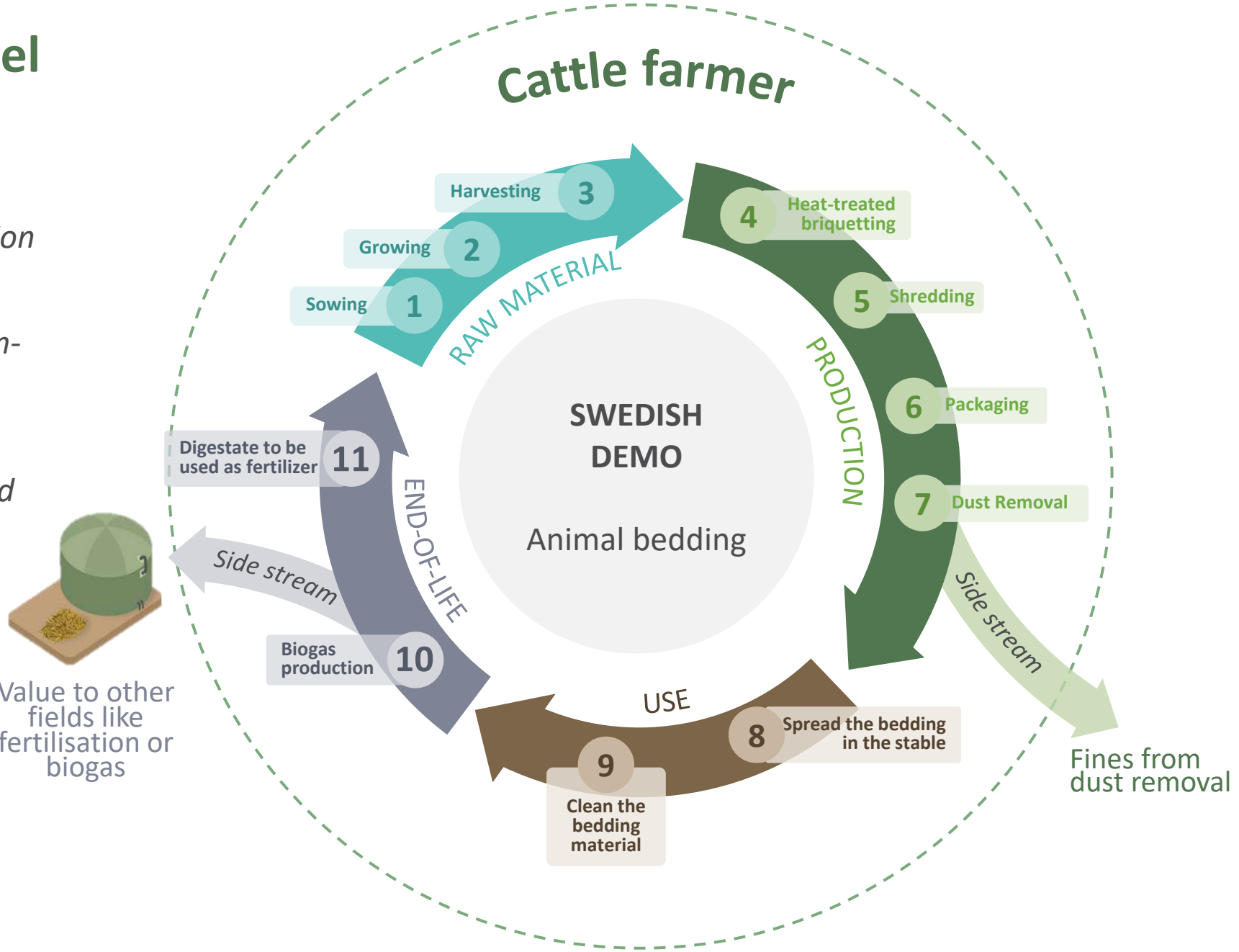
Swedish Demo

Single actor model

1. *Cattle farm invests in production line*
2. *Harvest and production done on-site*
3. *The product is used in-house*
4. *The used bedding material is composted onsite*
5. *Digestate used as fertilizer*



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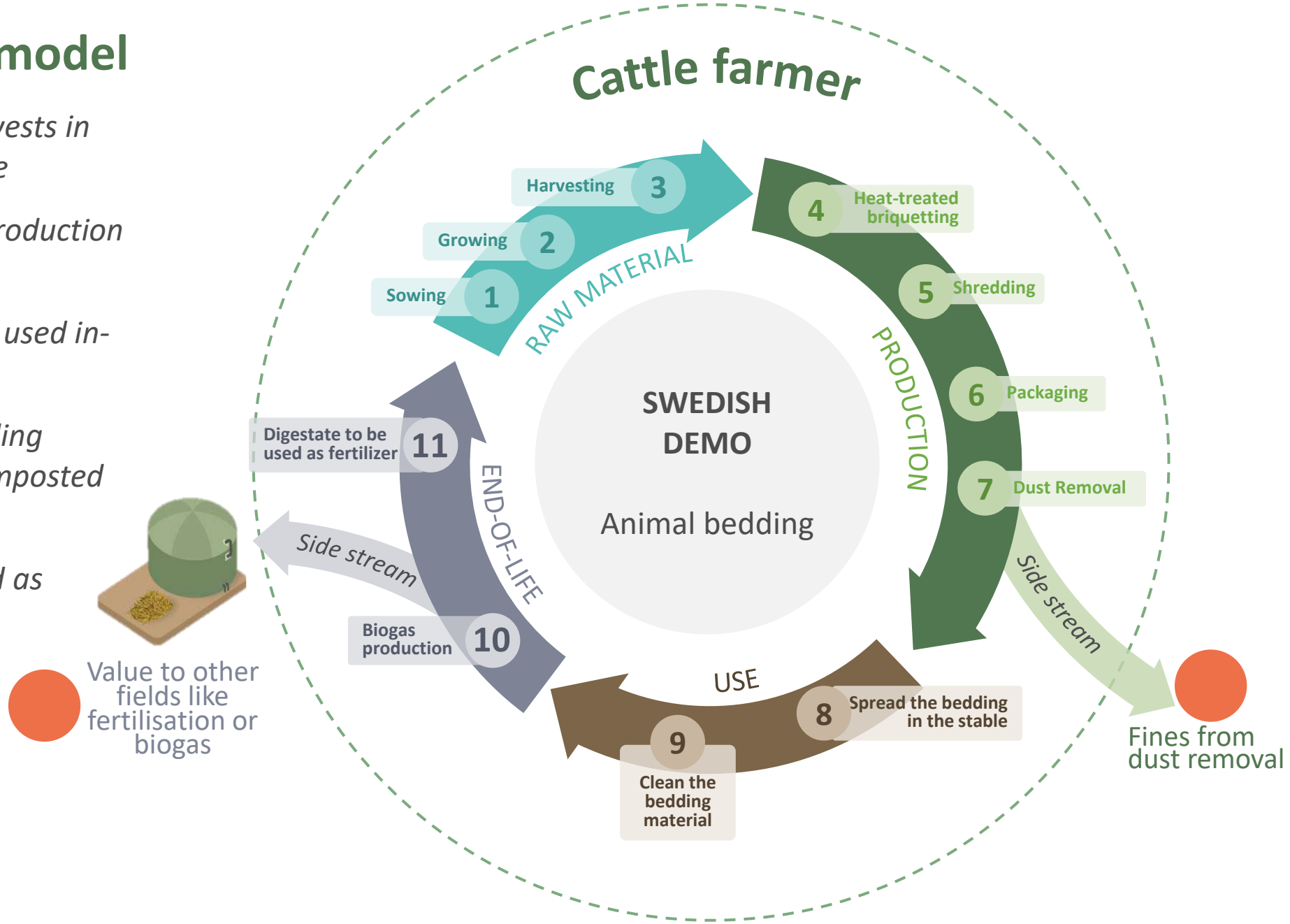
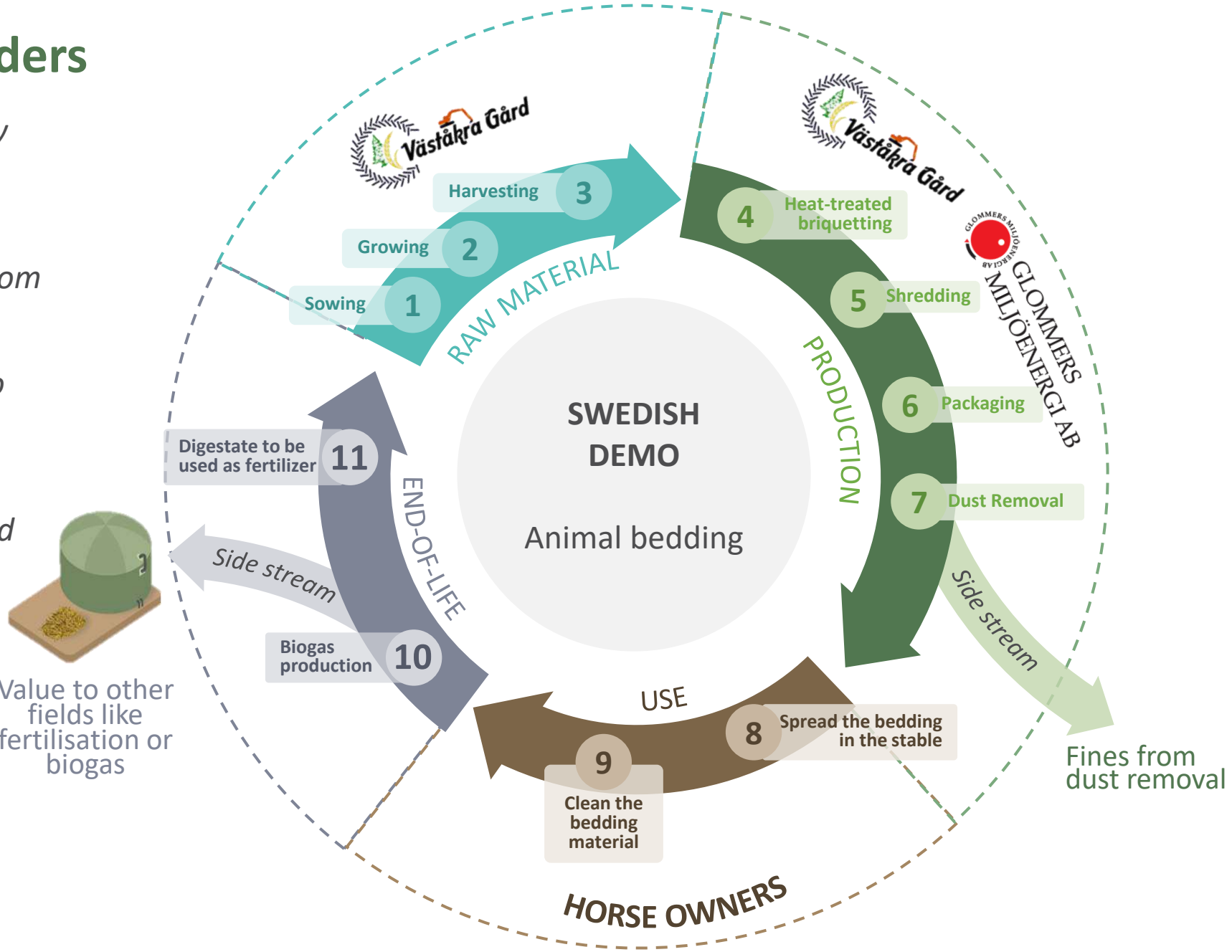


Various stakeholders

1. *Commercial company buys production line/adjusts existing*
2. *RCG is transported from nearby farms*
3. *The product is sold to horse owners*
4. *The used bedding material is composted onsite*
5. *Digestate used as fertilizer*



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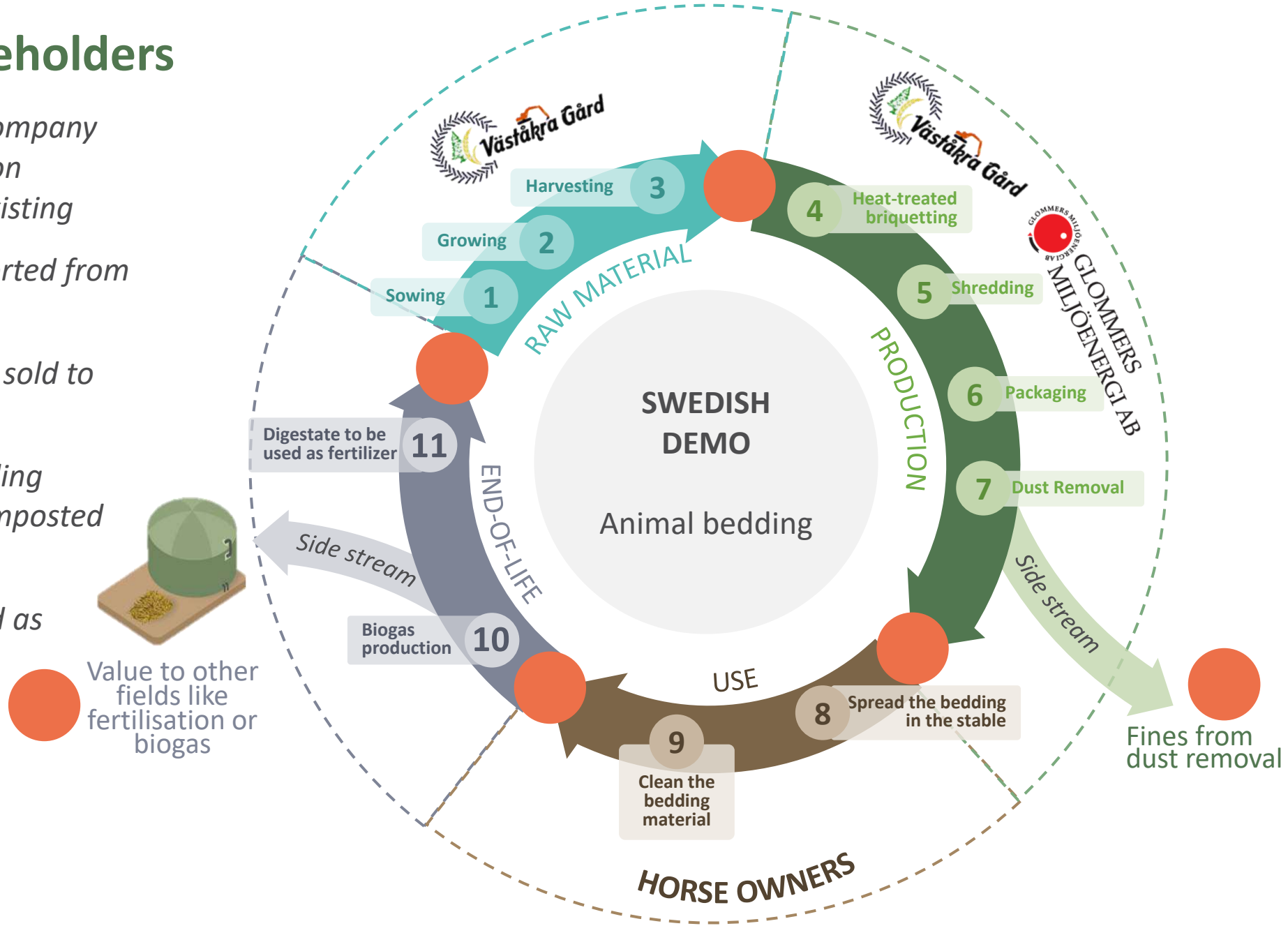

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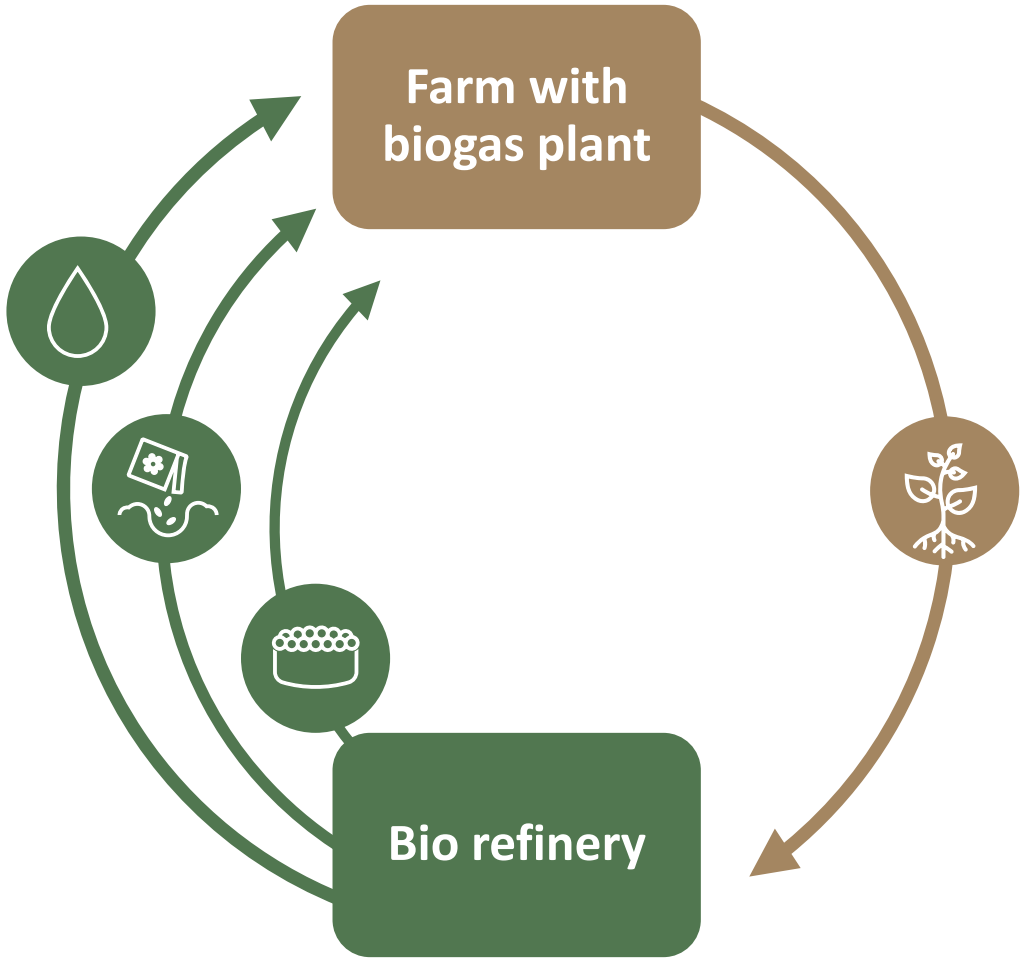
Danish Demo

Circular business models
with the Danish DEMO

1. Farmers deliver grass for protein production.
2. Brown juice (sidestream) is used for biogas. Biogas plants could be located on the farm, that delivered the grass.
3. Digestate from biogas production is used as fertilizers and returned to the farmer.
4. Grass fibers (sidestream) are used for feeding cows and or Biogas



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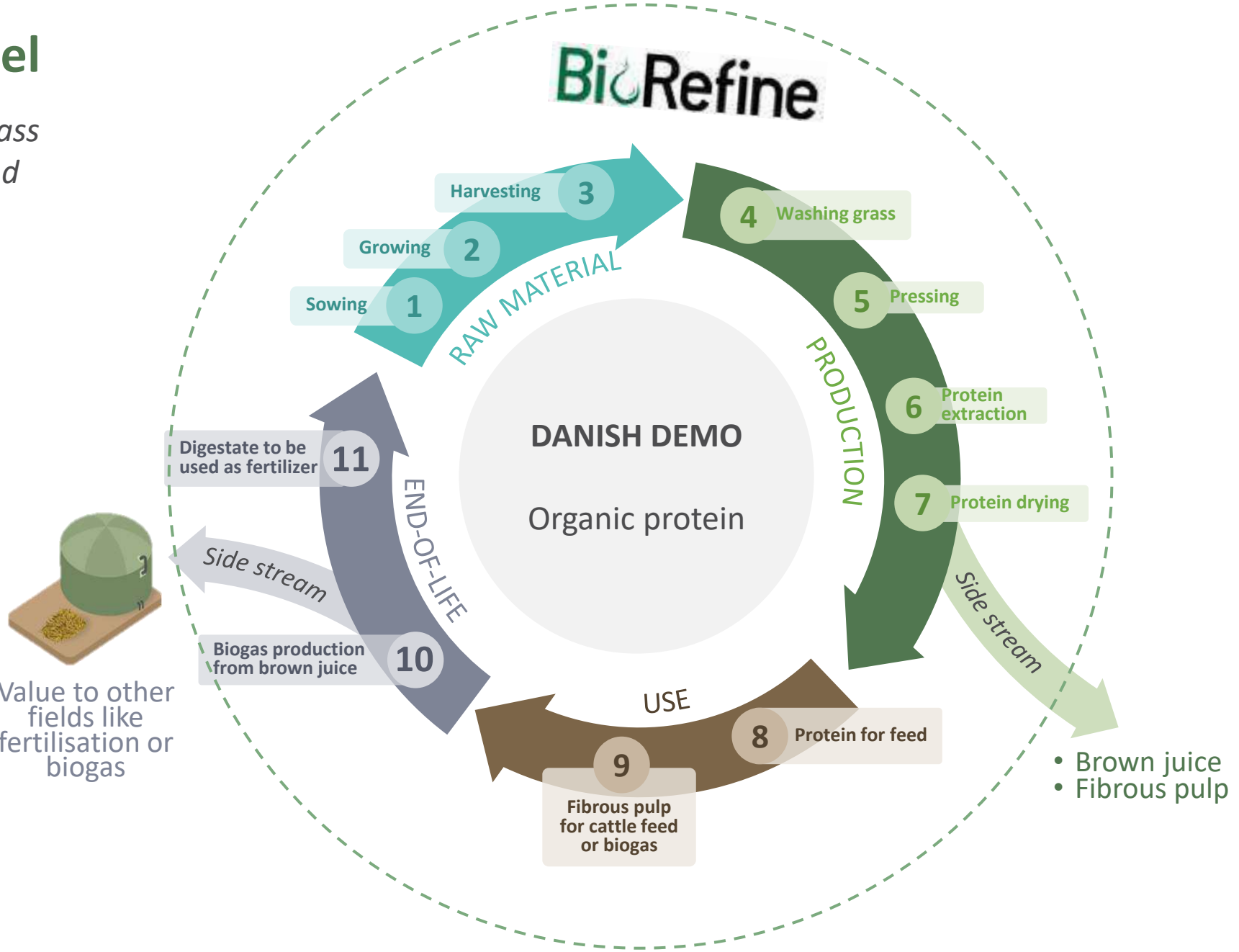
Single actor model

1. *BioRefine controls grass harvest, transport and the entire production line*
2. *The protein is sold as feed*
3. *The brown juice and fibre are used for biogas*
4. *Digestate used as fertilizer*



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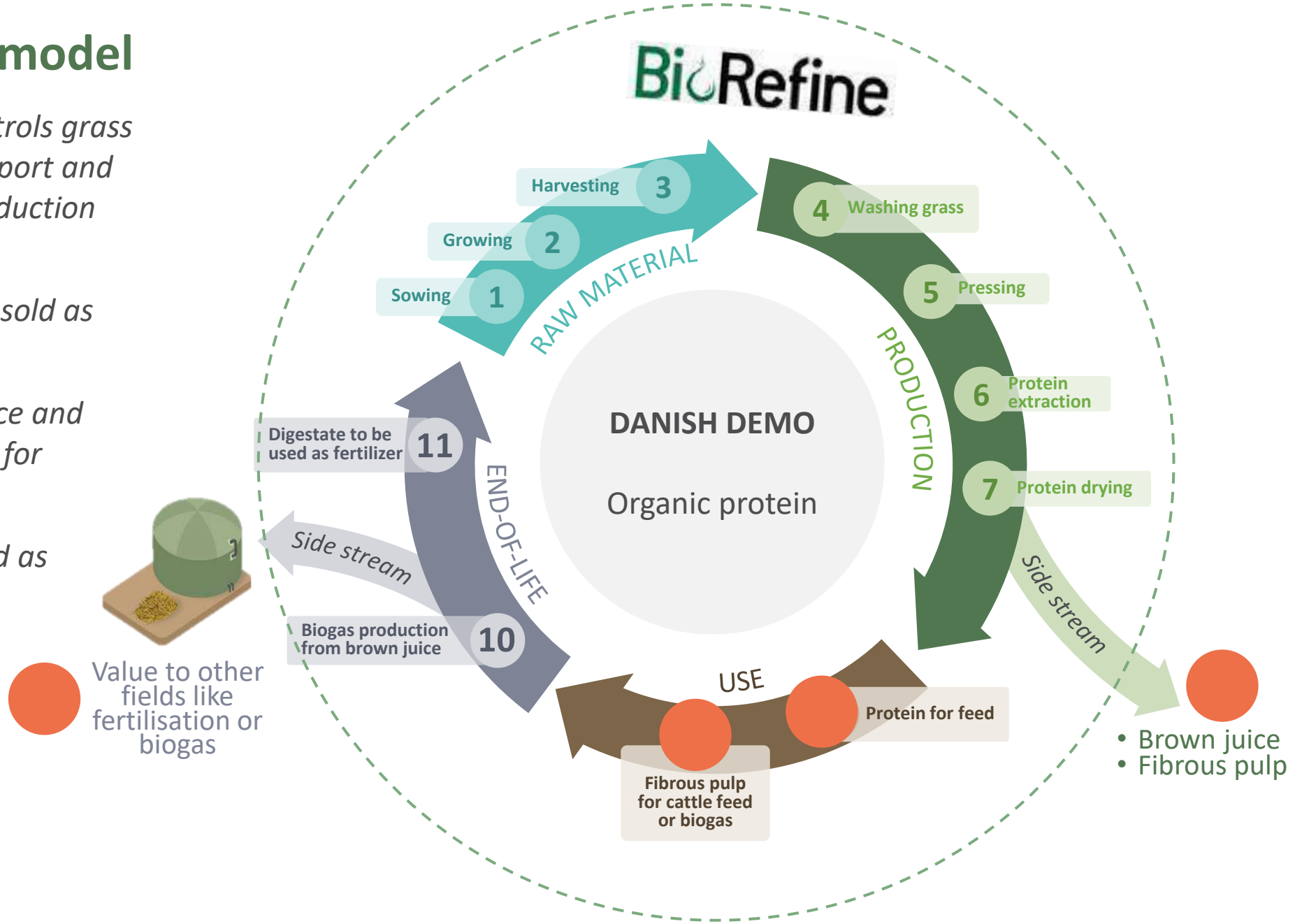
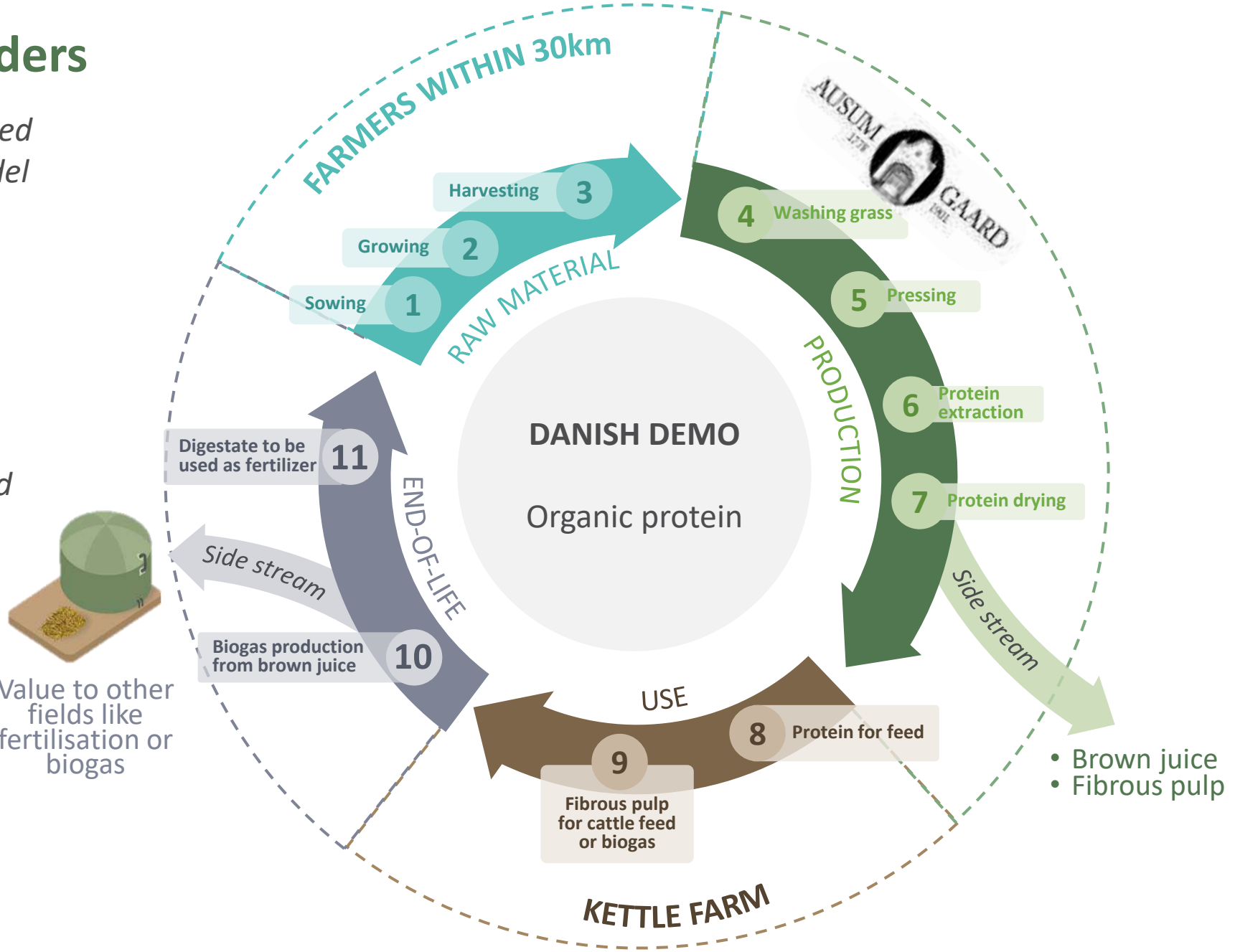


Various stakeholders

1. *Ausumgaard partnered with Vestjyllands Andel*
2. *Famers supply grass, full price or feed agreement*
3. *Revenue streams:*
   - *Protein as feed*
   - *Fibre cake as feed*
   - *Brown juice for biogas*
4. *Digestate as fertilizer*



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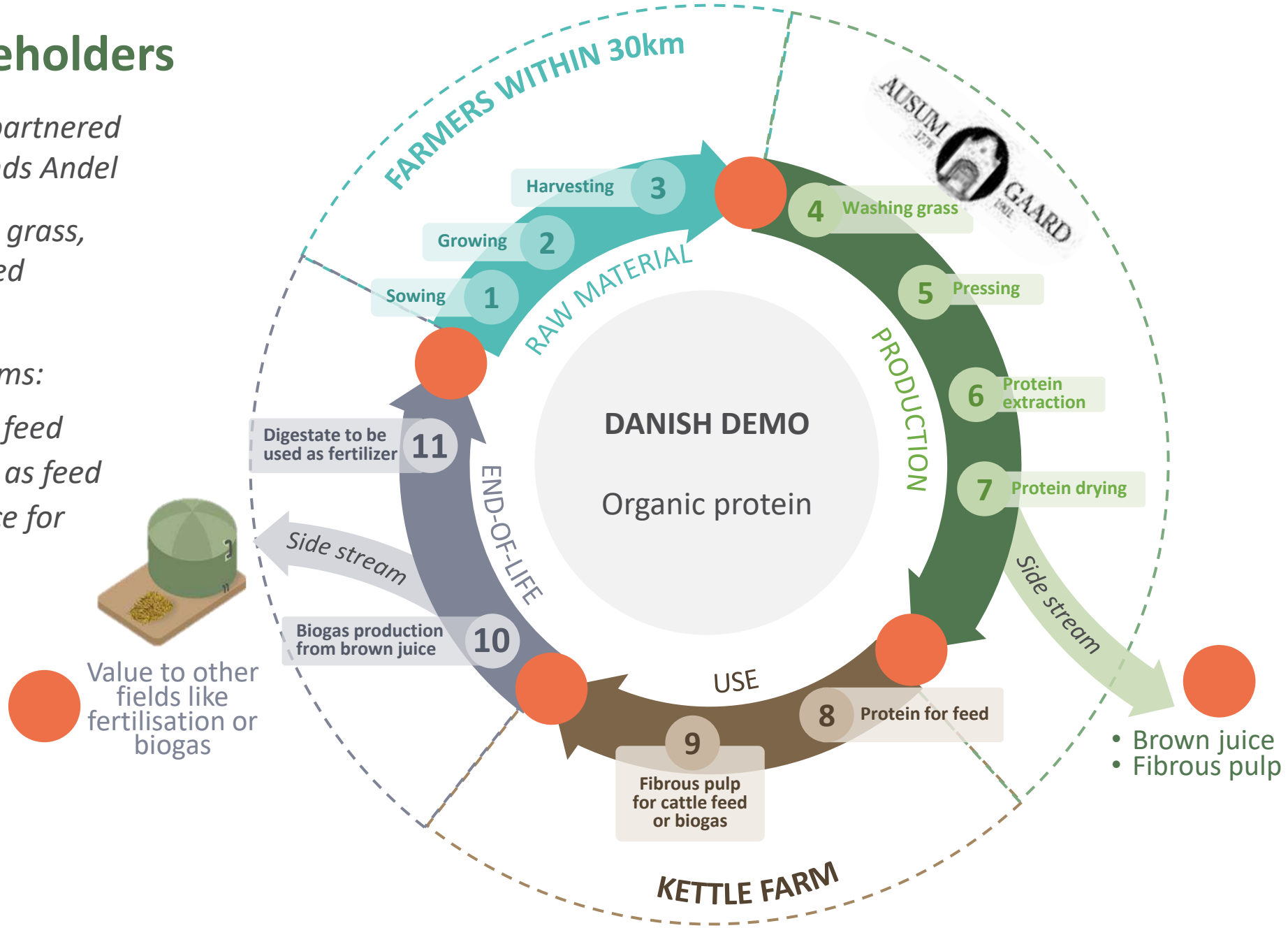

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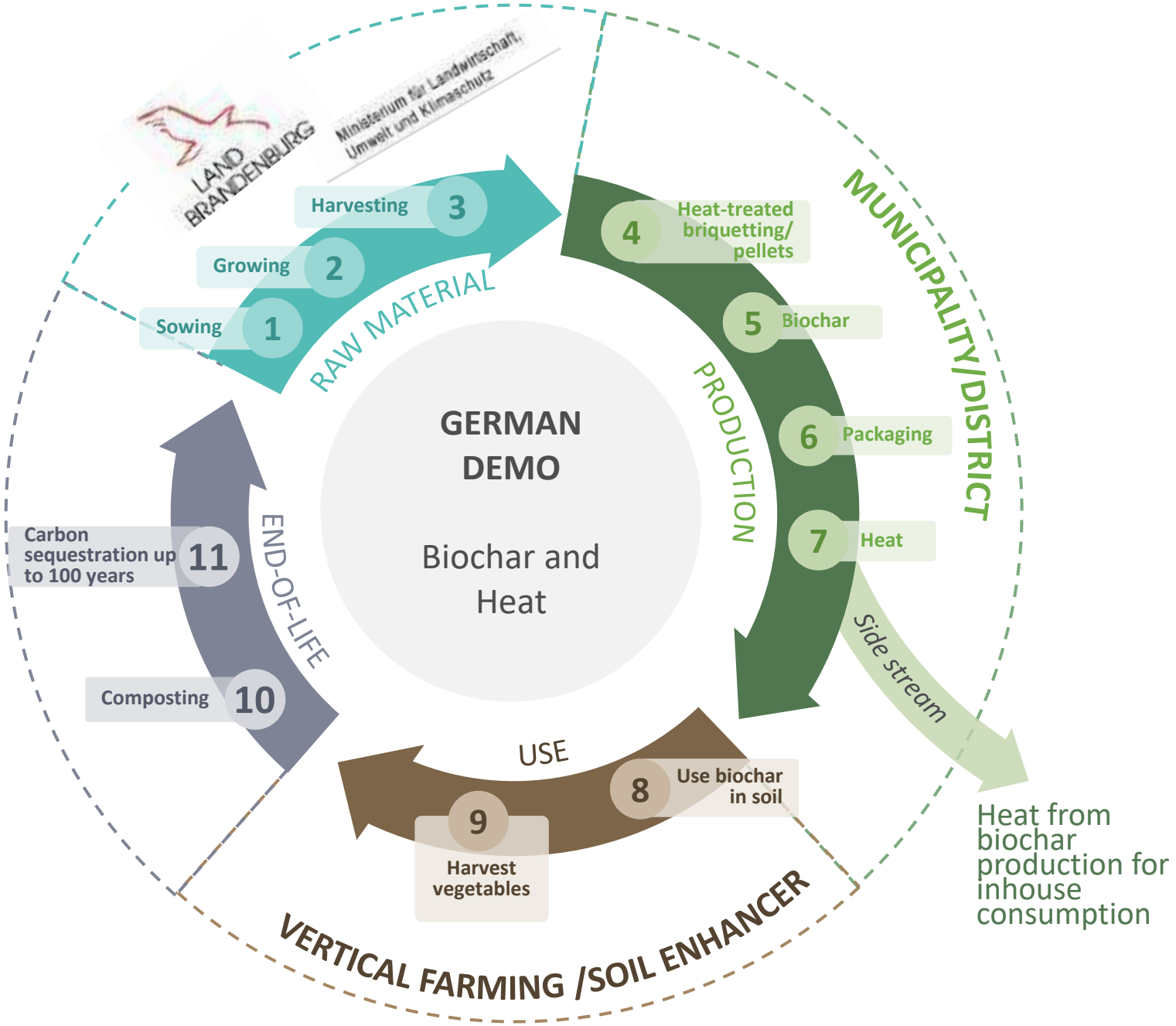
German Demo

Collaboration model

1. *Municipality buys and intalls a biochar & heat instalation to use heat for self consumption*
2. *Grass is transported from national parks and other public spaces.*
3. *The product is sold to companies doing vertical farming*



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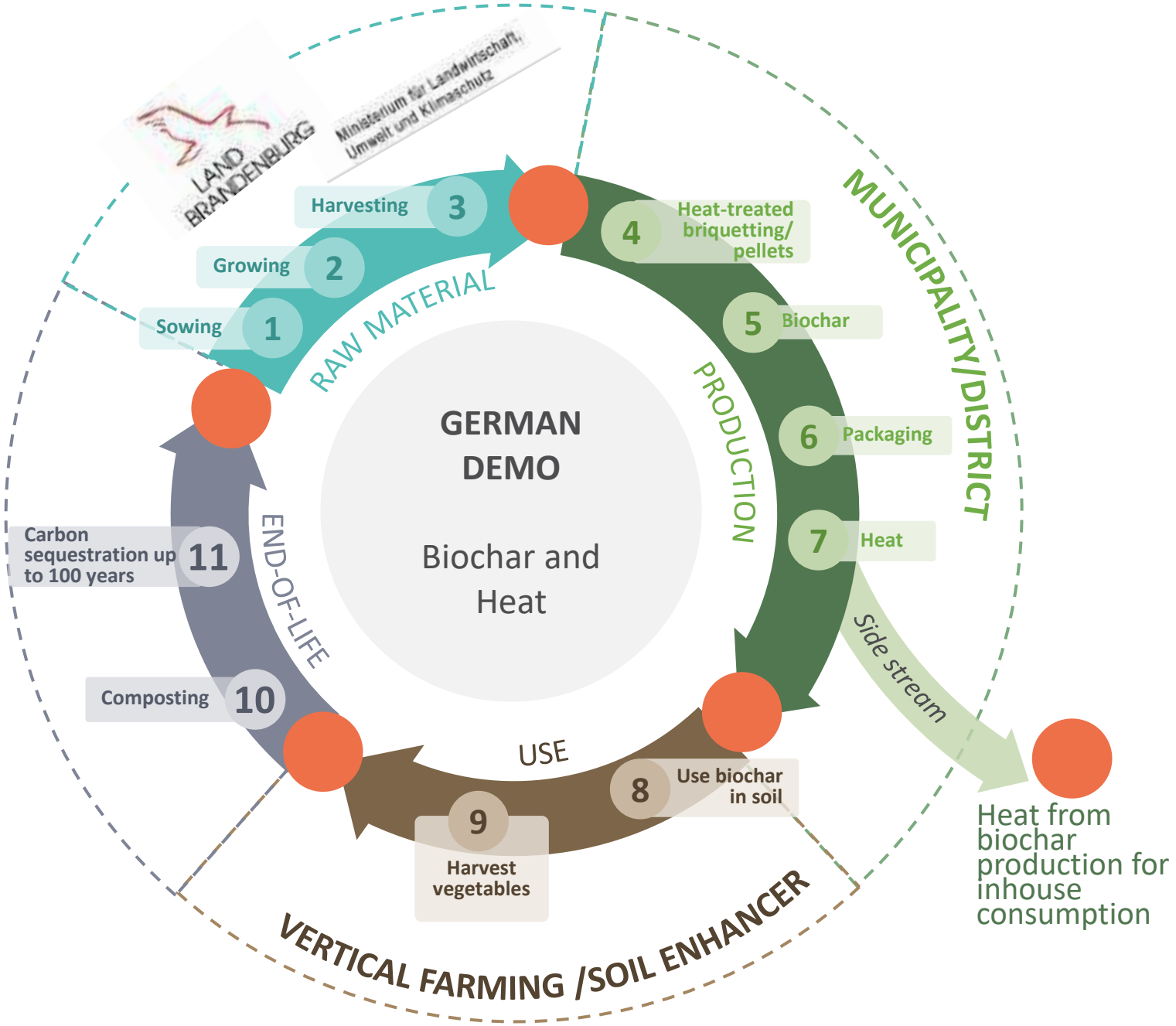

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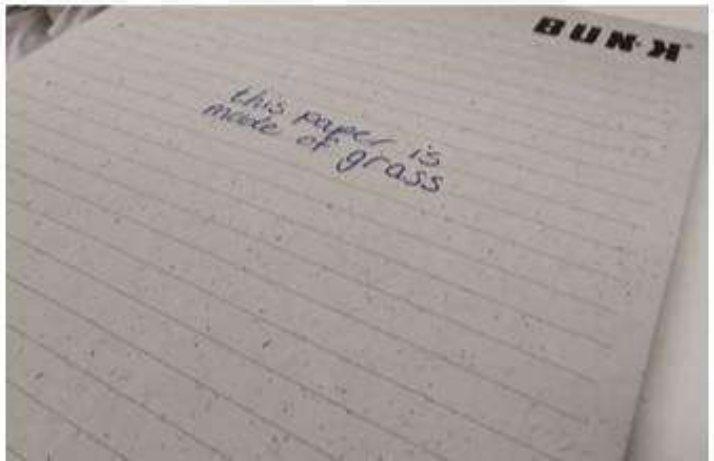
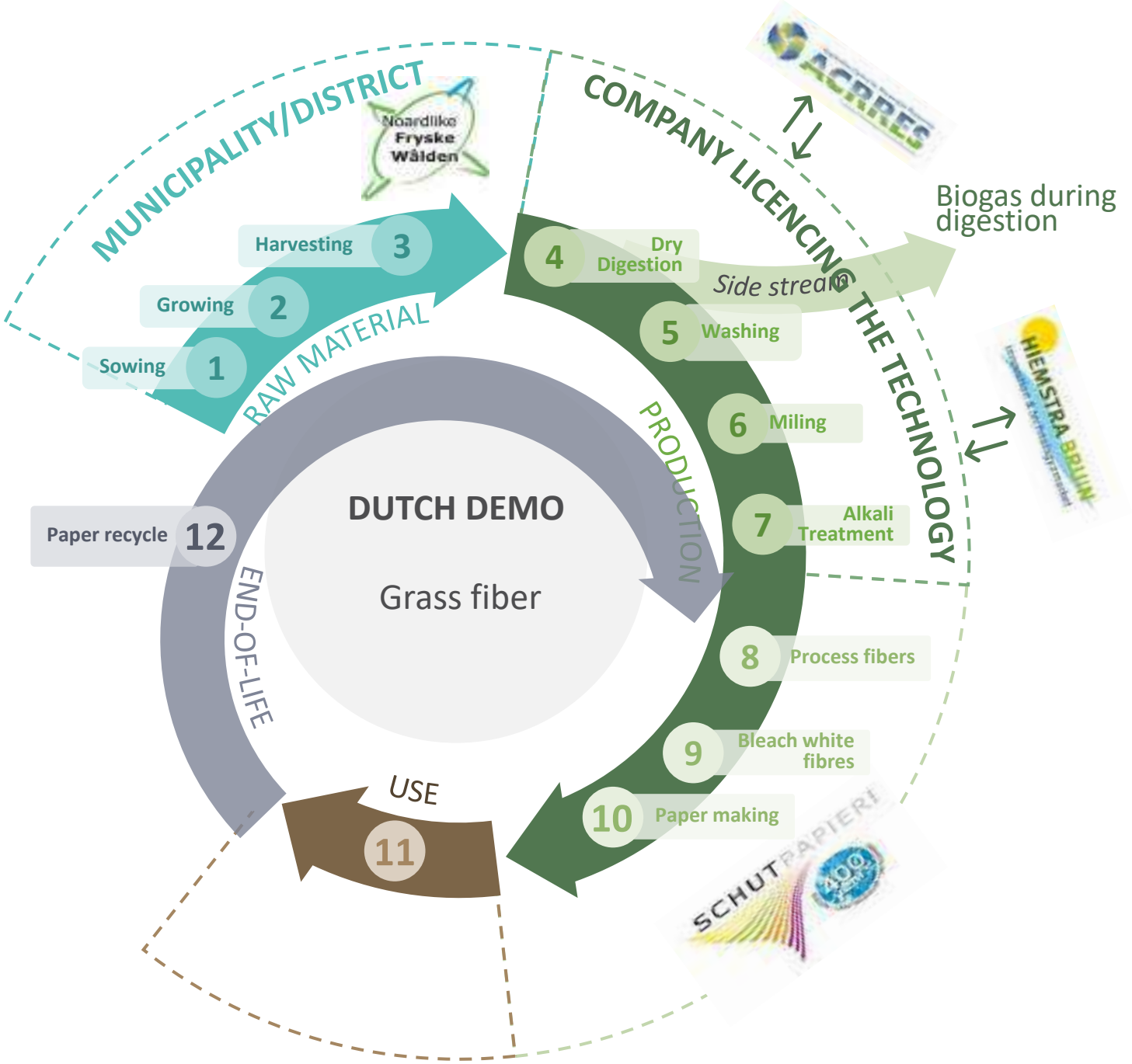
Dutch Demo



Licencing model

1. *Company licenses the technology from Dutch Demo*
2. *Grass is transported from national parks and other public spaces by municipalities or other actors.*
3. *The product is sold to paper making company*
4. *The paper is recycled*



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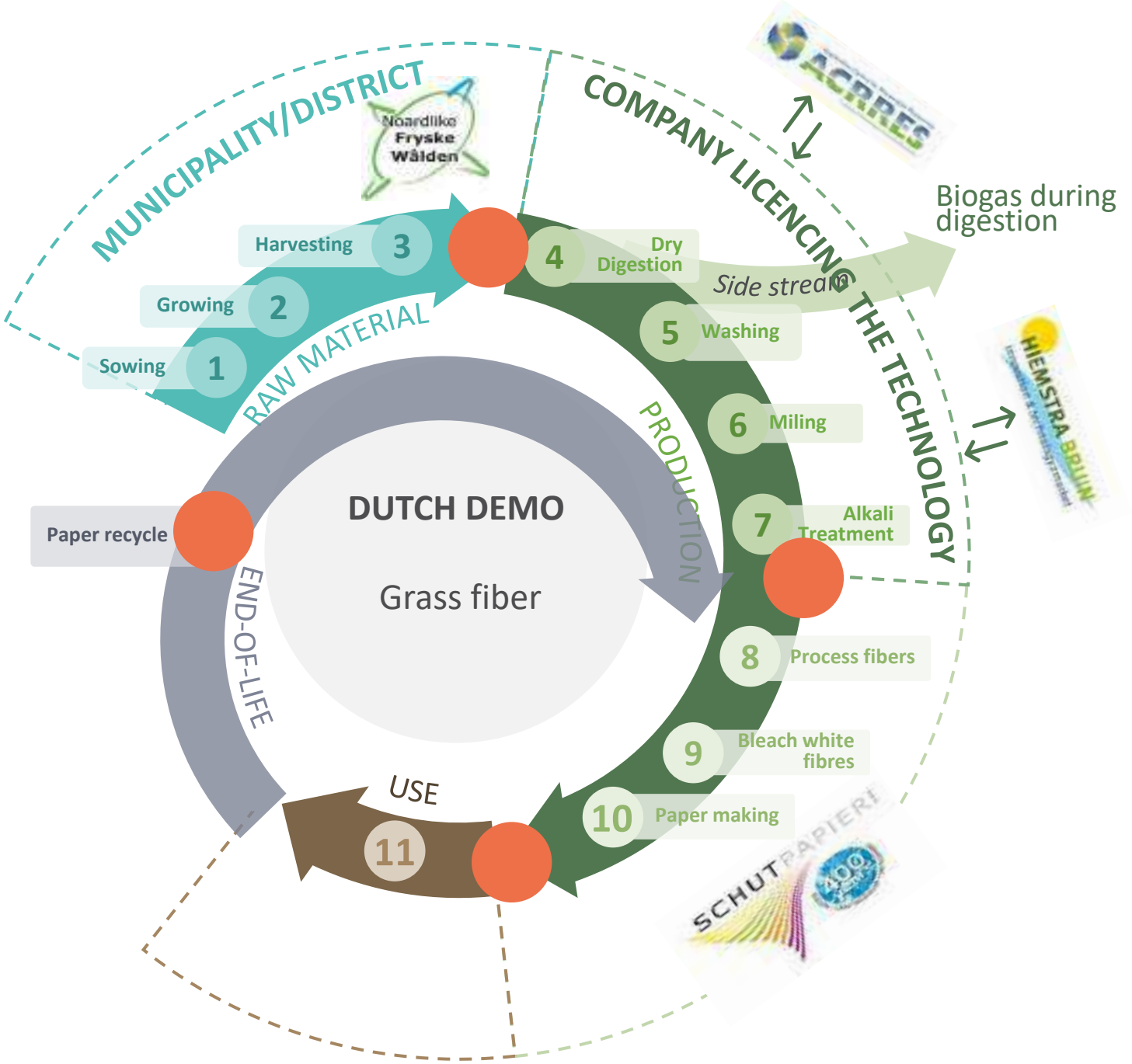


Observations

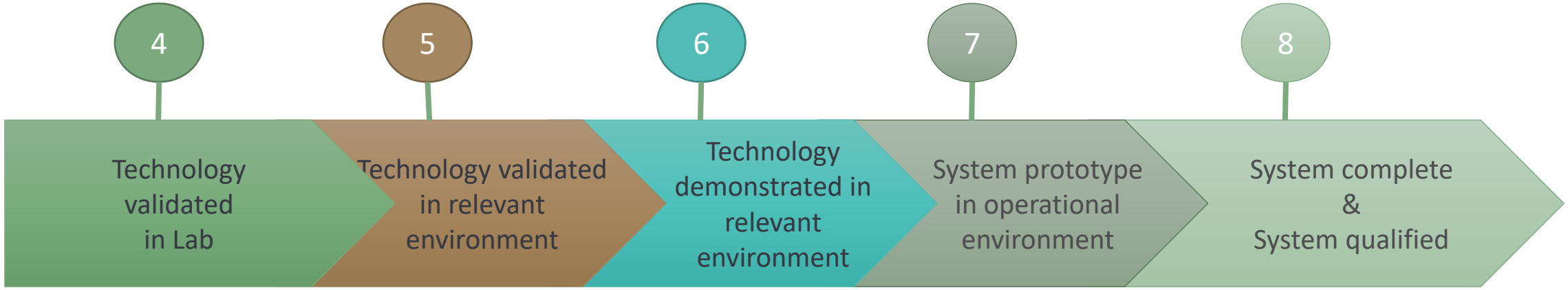
Sweden: Superior product with many additional benefits like lower maintenance and longer lasting compared to traditional bedding material including 13% more biogas production if added to manure.

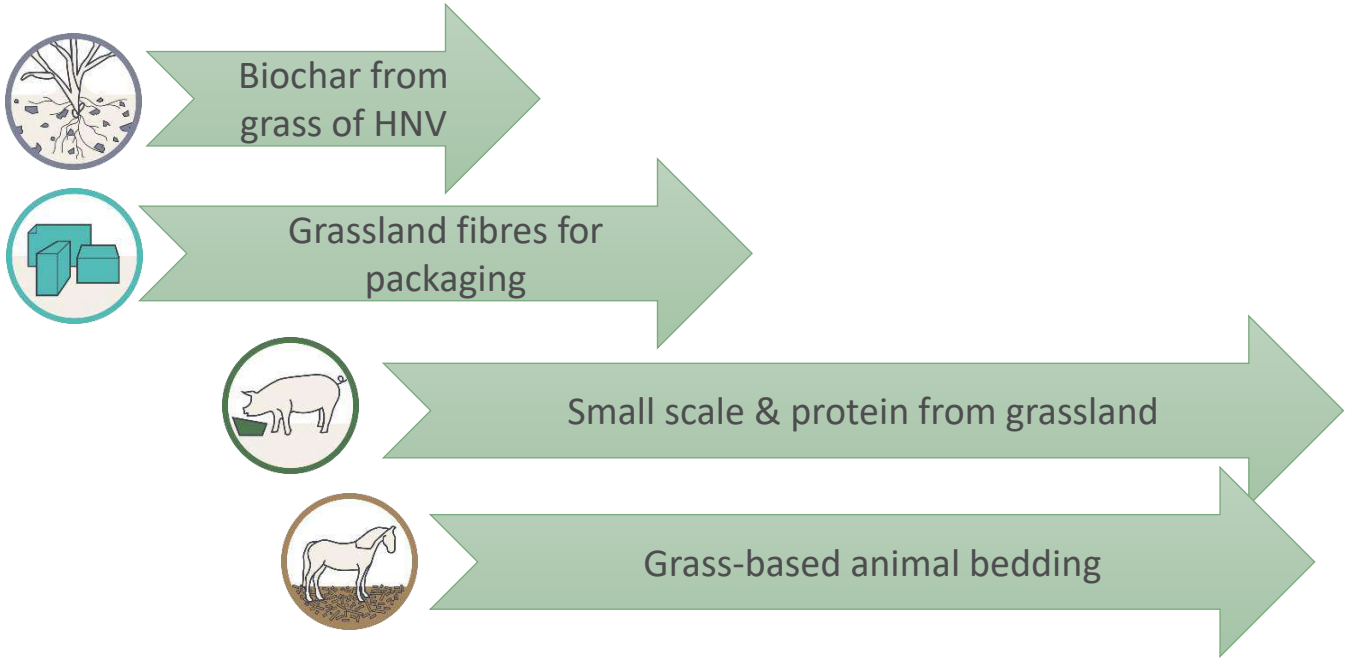
Denmark: Good product, already in high demand, exploring new opportunities namely human consumption and additional use for side streams like building material/isolation and the textile industry.

Netherlands: Feasibility study accomplished, looking for a company to license the technology and scale up. Explore business models with multiple digesters for large scale production

Germany: More developent is needed and the right business model

Link between Readiness Results





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Key Learnings

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One size business model does not fit all

You need to adapt the business model to the business conditions

Partnerships and local networks are key for success

In a supply chain, multiple businesses can develop based on product/ services/ technology

Partnerships in the DEMOs

Sweden: a partnership between farmers and the research center/university (RISE).

Denmark: Collaboration between farmers' associations (Velas), university (Aarhus University, DK), and a network for organizations within the food and bioresources sector (Food and Bio Cluster Denmark).

Netherlands: Research center (Accres), paper factory and farmers' associations

Germany: Research institute (ATB), organisation (nature park), company (biochar producer) and farmers

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Business model vs product?

How you sell and deliver your solution to your customers → *and make money!*

Business model vs product
→ *which one will give you a competitive edge?*

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Business modelling is not rocket science

- Understand **who your customers are**
- Secure the solution addresses the **customers' real needs**
- **Seamless delivery** of the solution to the customers
- Capture part of the **value created** for the customer into an **income stream** to the company

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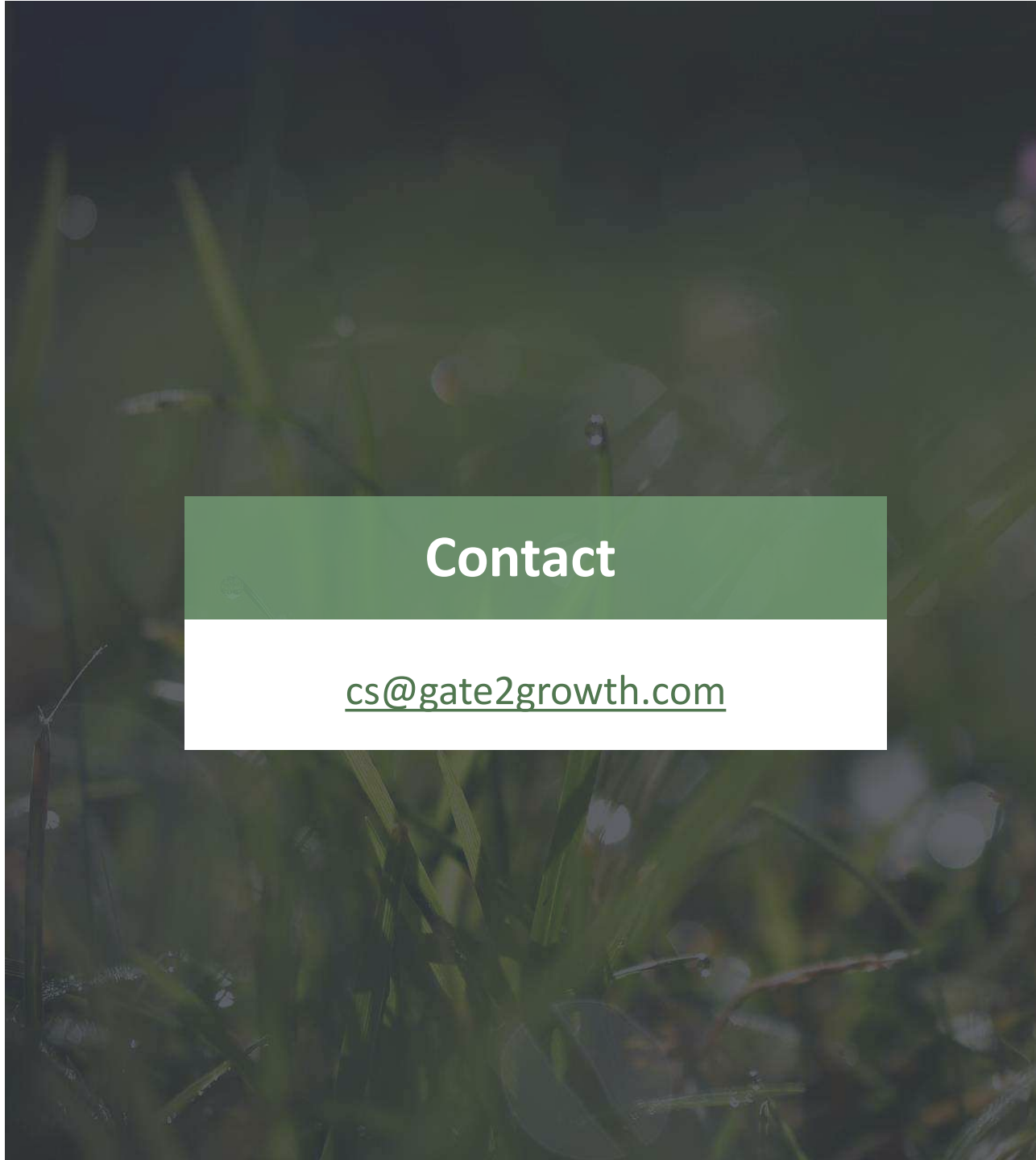

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