Together towards a more Circular Foodvalley Region

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The Project

"Tracing <u>food-losses</u> and underutilized <u>waste</u> <u>streams</u> in the <u>Foodvalley Region</u>"

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Problem description

- No clear overview of the companies

- Multifaced groups of stakeholders

- Awareness and Interest

- Legislation and Regulation

Stakeholders

01

Food and Feed Processors
Business 2 Business

02

Municipalities
Waste collectors

03

Living Lab Regio Foodvalley Circulair
Commisioner

Not included:
Corporate Research Facilities
Farmers
HORECA
Brick and Mortar stores (e.g., local butchers)

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Research Questions

Main Research Question:

"What **food waste streams** are currently being underutilised in the **Foodvalley region** that may be more optimally valorised according to **Moerman's ladder**?"

Sub Research Questions

Identification

- What **food processors** are in the region and what waste streams do they produce?

- Which of these are underutilized according to **Moerman's ladder**?

Evaluation

- What **magnitude** are the waste streams compared to one another?

- Which one has the highest **impact** in terms of kilograms and CO_2 footprint?

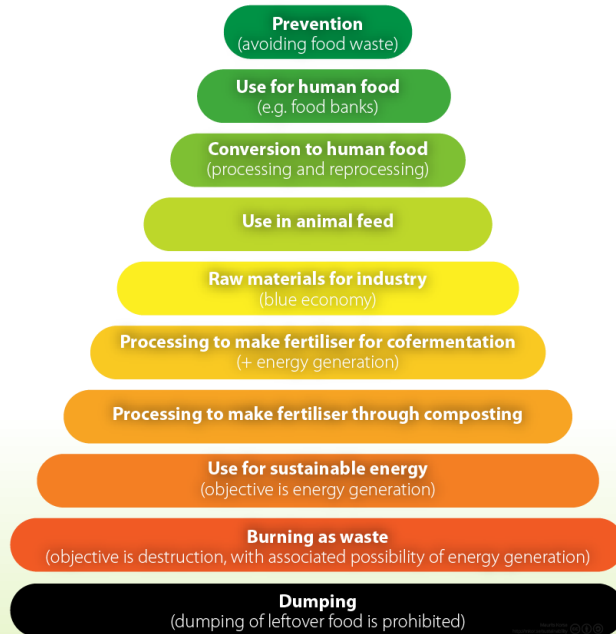- What are the current bottlenecks preventing the valorisation of underutilized waste streams?

Advice

- How can existing **waste management strategies** from companies be improved in the Foodvalley region?
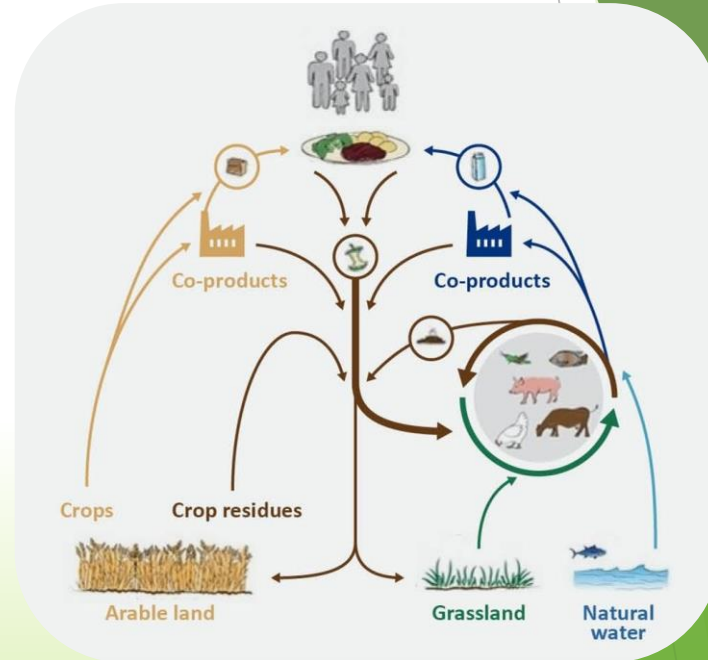
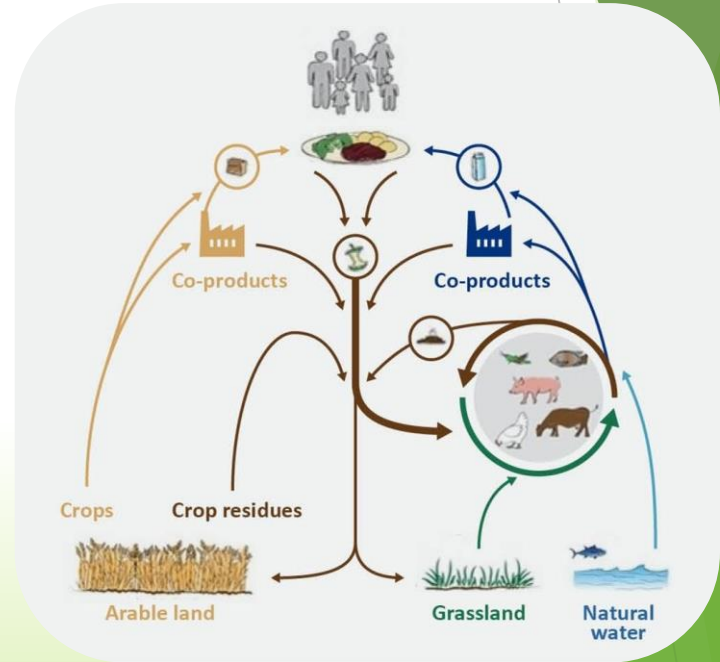# Background & Method

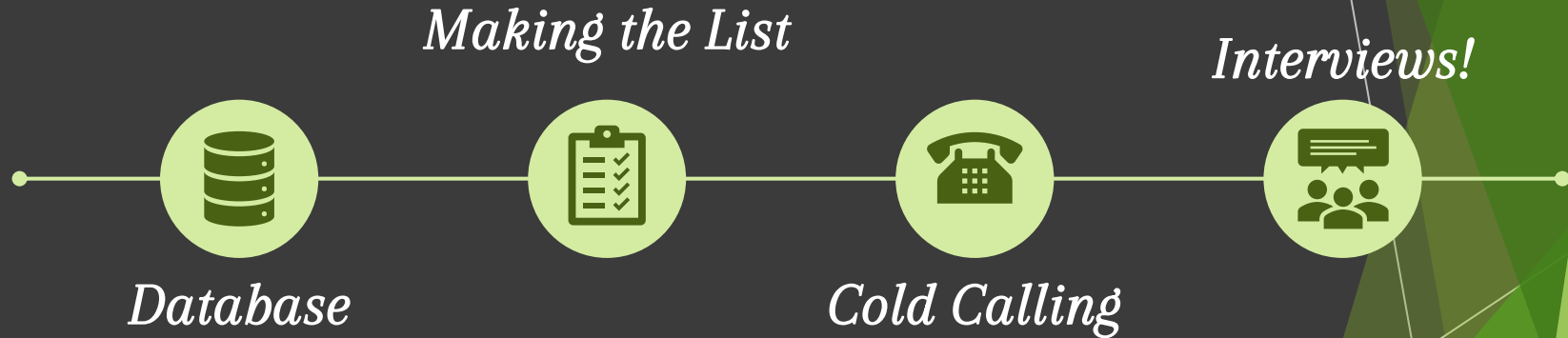# Moerman's Ladder

Circular Economy

Circular Economy

"The circular economy (CE) is a closed-loop economic system that maintains the highest utility of raw materials, components, and products with minimal loss of value, uses renewable energy and takes system thinking as the core"

Data Collection

Database
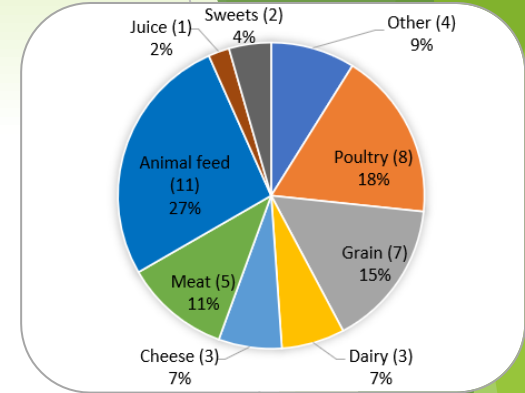
Making the List

Cold Calling

Interviews!

The Results
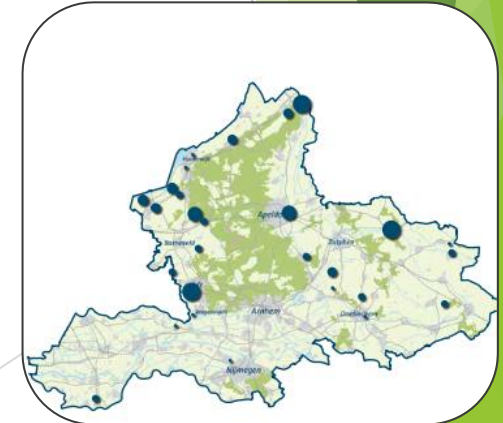
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Industry Data

41 Food Processing Companies

with 45 local facilities

11 interviews were held

Industry type	Identified waste streams	Waste management
Grain Feed	Dough (16) Little quantities of animal feed (1). Negligible quantities of animal feed (6)	Sold to feed companies (16). If not suitable for animal feed, it will be used for energy production (1).

Moerman's Ladder

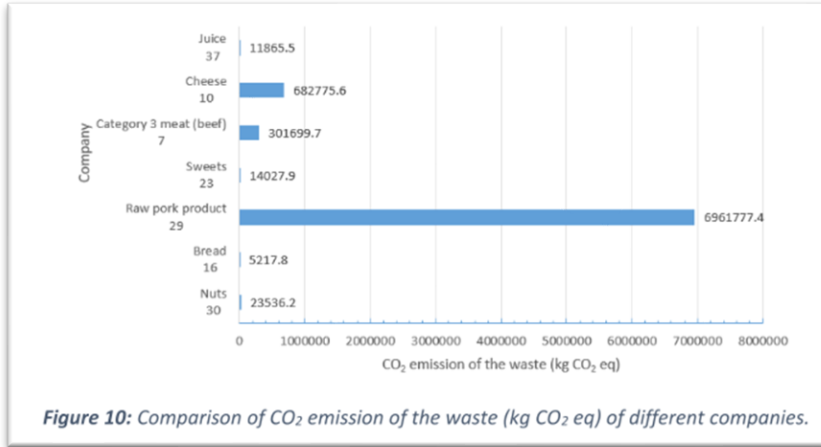| Moerman ladder (#companies)	Feed (2)	Grain (1)	Meat (2)	Cheese (1)	Sweets (1)	Juice (1)	Nuts (1)
1. Prevention							
2. Use for human food		Grain	Meat	Cheese	Sweets	Juice	Nuts
3. Conversion to human food				Grated cheese	Dough		
4. Use in animal feed	Feed	Dough		Cheese waste	Starch, sugar		Sugar, peanut, herbs
5. Raw materials for industry			Bones with meat				
6. Processing to make fertilizer for fermentation						Water with sugar	
7. Processing to make fertilizer though composting							
8. Use for sustainable energy	Feed leftovers		Bones with meat				
9. Burning as waste							
10. Dumping							

CO2 Emission

Figure 10: Comparison of CO₂ emission of the waste (kg CO₂ eq) of different companies.
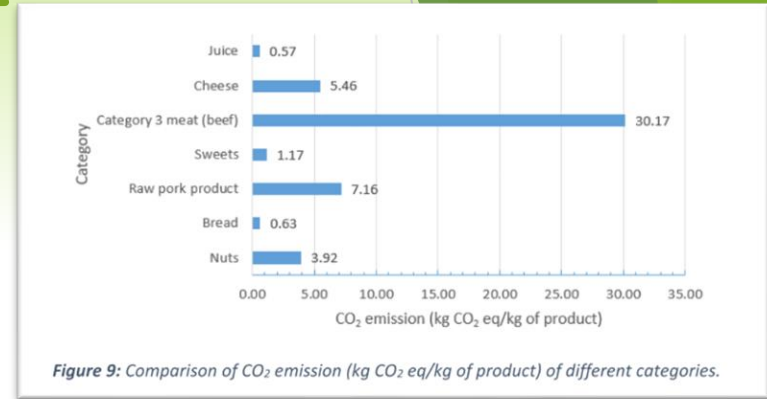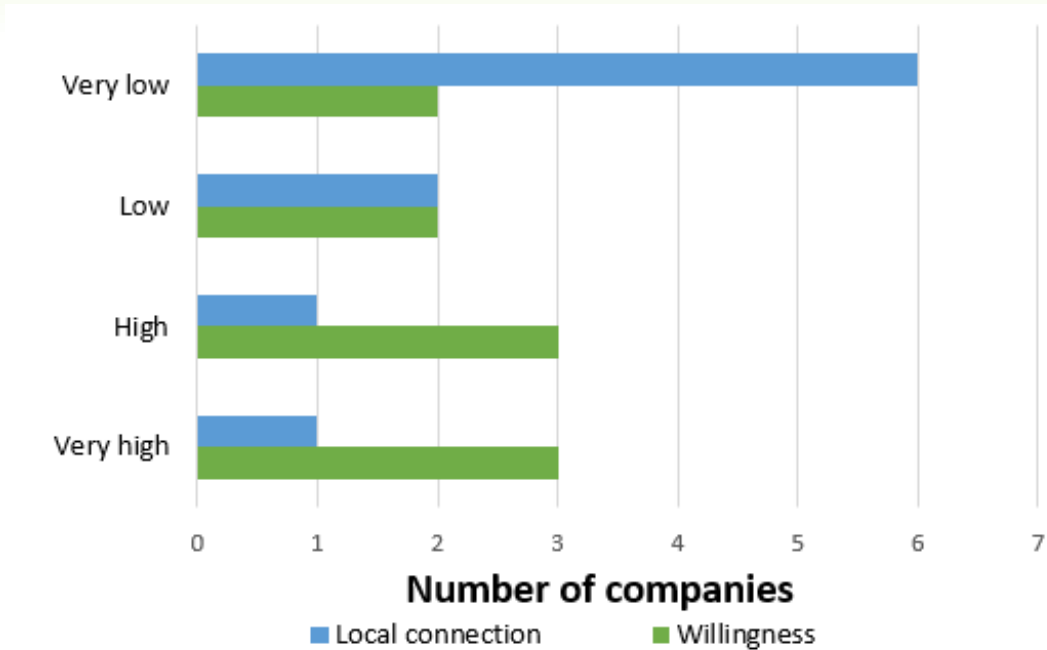

Figure 9: Comparison of CO₂ emission (kg CO₂ eq/kg of product) of different categories.

Figure 8: Comparison of quantities of waste monthly in different companies.

Willingsness and Connectivity

Bottlenecks

Evaluation

Bottlenecks

01
Regulations & Food Safety
Waste as an input stream,
certificates, & allergens

02
Nutritional Content
Even after food safety
regulations

03
Economies of Scale
Size of the companies &
constant streams

04
Money
Transportation &
energy costs

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Limitations

- Unwillingness of companies

- Confidentiality issues

- Time limitation

- Access to all the information and companies

- General nature of data

Conclusion

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Conclusions

- Companies are efficient

- Inconsistent and mixed waste streams

- Exported outside the region

- Price of waste.

- Regulations

Advice

Advice

Short-term

- Connect existing food companies to the animal feed industry

- Awareness campaign
  (Food waste, Moerman's ladder & Regulations)

- Practical recommendations:

  - Meat industry has valuable waste

  - Explore poultry sector

- Common database/ social network

Long-term

- Integrate start-ups

- Keep waste streams in the region

- Increase the scope for larger food processors

Discussion

Let's Discuss
(Questions?)

Thank you.

Thanks

For more information or questions:

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