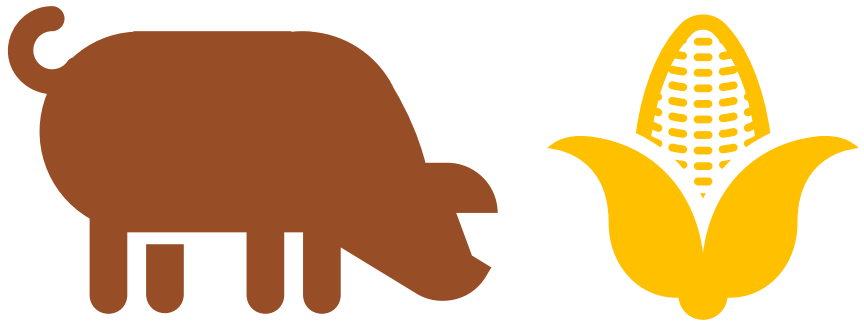


EXPLORATION OF VALLEI VARKEN'S FEED-MANURE EXCHANGE

ACT-2461
Sijin Chen, Tomas van der Heijden, Lisa Ligtermoet, Ferneau Ploumen, Zhao Zhao and Arjan Uijterlinde

This project was commissioned for Francien de Jonge (WUR Science Shop) and Vallei Varken

PRESENTATION CONTENT

AIMS OF THE PROJECT

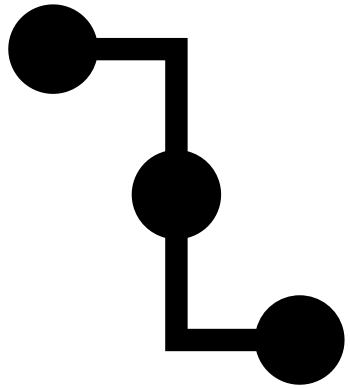
Explore reconcilability of terms and conditions of a feed-manure exchange between Vallei Varken and arable farmers

Provide research and execution recommendations for project commissioner Francien de Jonge

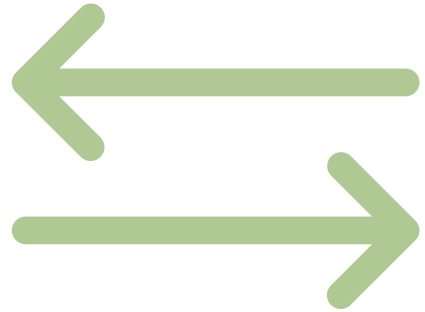
VALLEI VARKEN

6000 pigs for pork production

Gerald Deetman (owner) and Gerard van Eijden (farm veterinarian)

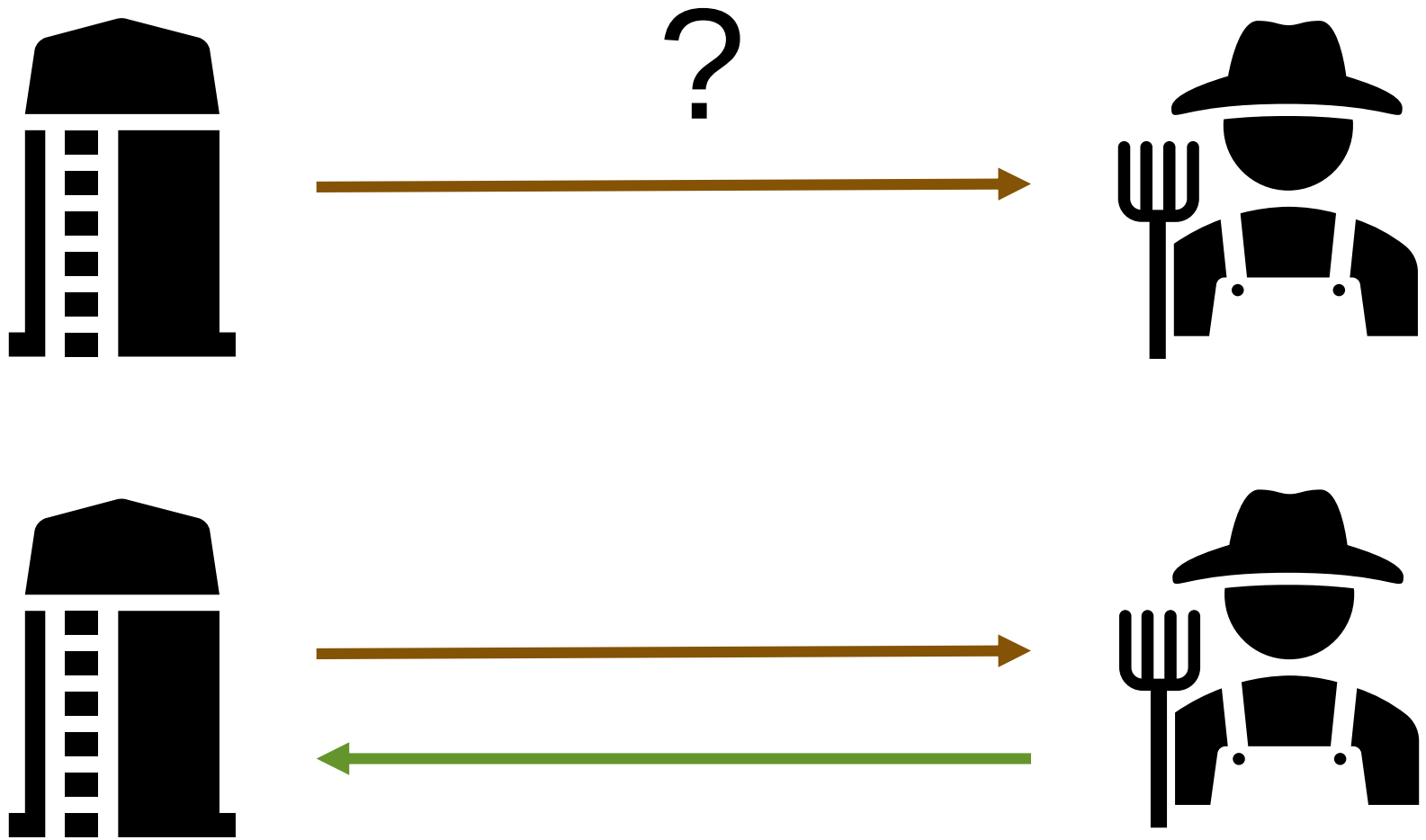


Short supply chain with fixed contracts among key partners



Aims to establish a feed-manure exchange to increase financial stability and promote regional collaboration

Vallei Varken



RESEARCH QUESTIONS AND METHODS

To what extent are the terms and conditions for feed-manure exchange between arable farmers and Vallei Varken's pig farmers reconcilable?

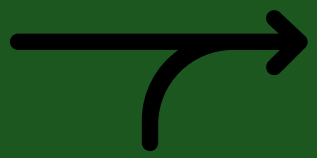
Why is feed-manure exchange between livestock farmers and arable farmers important to stimulate agricultural circularity?

What is the current state of the feed-manure system of Vallei Varken's pig farmers?

What are the terms and conditions of pig farmers and arable farmers concerning feed-manure exchange?

Which factors do Vallei Varken's farmers and arable farmers deem as hampering or stimulating in fulfilling the terms and conditions?

LINEAR ECONOMY VS. CIRCULAR ECONOMY



Emergence circular economy: in response to linear economic sytem

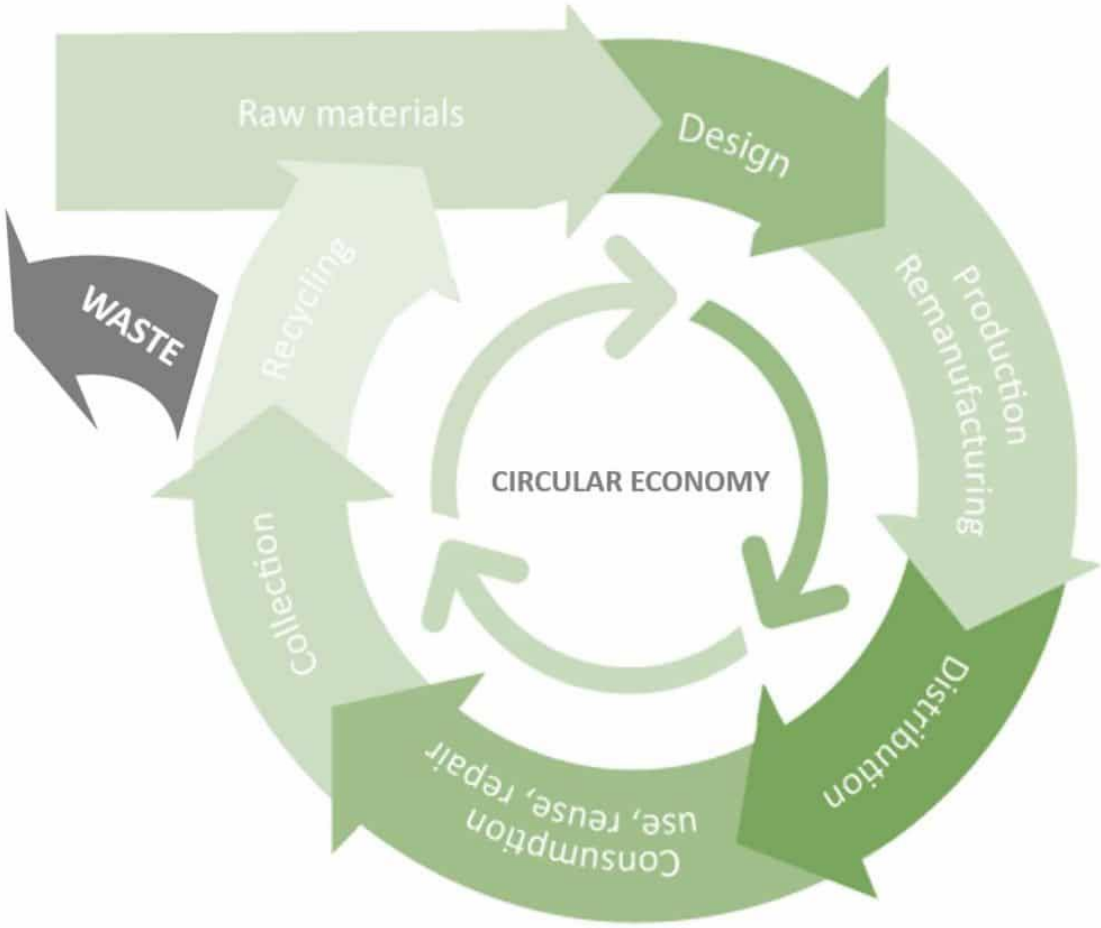
From take-make-dispose trajectory to reduce-reuse-recycle trajectory

Minimization of ecological impact of production

Generation of positive impacts on society

3 PRINCIPLES CIRCULAR ECONOMY

1. Design out waste and pollution
2. Keep products and materials in use
3. Regenerate natural systems



IMPORTANCE OF CIRCULAR AGRICULTURE

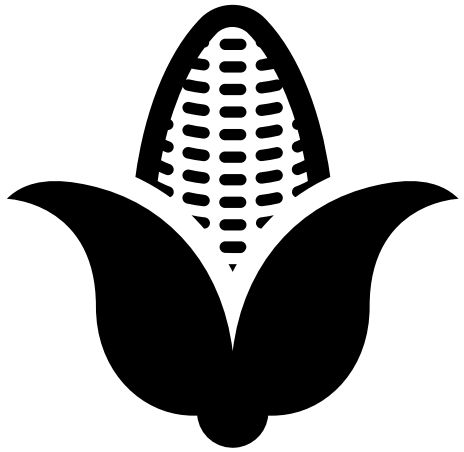
Indispensable component of circular economy

Agriculture faces large challenges and contributes to climate change – dependent on input of finite resources

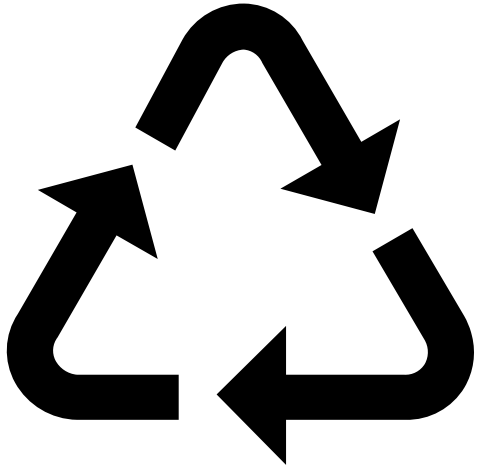
Decoupling of environmental pollution and agricultural food production

Circular agriculture in the Netherlands: become the leader in 2030

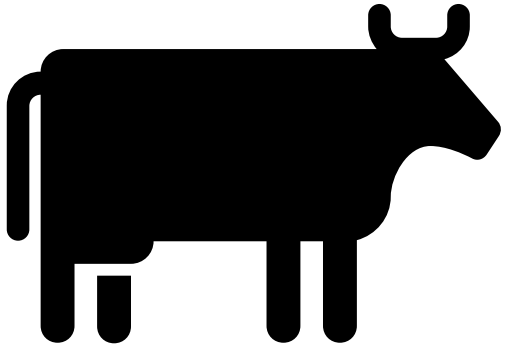
Vision of Ministry of Agriculture, Nature & Food Quality: stimulate collaboration within regions and agri-food chains, shortening of agri-food chains, and valorise waste streams.



Plant biomass should be consumed by humans first



By-products of the food chain should be recycled back into the food system



The use of animals in the food system should be optimized

4 MAIN PRINCIPLES OF CIRCULAR AGRICULTURE

Foundational principle: safeguard natural resources, including soil, air, water, and biodiversity

TERMS AND CONDITIONS

TRUST AND LOYALTY

MUTUAL FINANCIAL BENEFITS

CLEAR NUMBERS AND SPECIFICATIONS

CONTEXT-ADEQUATE MANURE QUALITY (FARMER DEPENDENT)

STIMULATING FACTORS

- Manure quality
- Phosphate and nitrogen content
- Liquid manure generally not appreciated
- Financial stability
- Fixed cost price
- Offtake reliability
- Underlying circular ambitions

Straw manure

Liquid manure

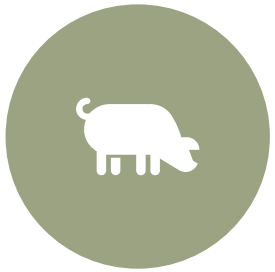
HAMPERING FACTORS

- Manure quality
- Phosphate and nitrogen content
- Liquid manure generally not appreciated
- Experiences using pig manure
- Acreage availability
- Lack of crop residues
- Underlying assumptions: fixing Vallei Varken's problems

CONCLUSION

CLEAR NUMBERS AND SPECIFICATIONS ARE INDISPENSABLE FACTORS FOR COLLABORATION

SEVERAL ARABLE FARMERS ARE INTERESTED IN A FEED-MANURE EXCHANGE



MANURE QUALITY NEEDS TO BE HIGH AND ADAPTABLE

VALLEI VARKEN CAN CONTINUE WITHIN MANY DIFFERENT RESEARCH DIRECTIONS

RECOMMENDATIONS

Manure treatment

- Application
- Processing

Future collaborations

- Case study with 1 interested farmer
- Size of collaboration

Economic analysis

Animal feed

ANY QUESTIONS?

Thanks for your attention!