

campus fryslân

MASTER'S THESIS

BARRERS TO THE INPLEMENTATION OF CIRCULAR FOOD NASTE IN FARMING: EVIDENCE FROM THE INSECT

BY JULIUS FISCHER (ALONGSIDE)



PROBLEM

Inefficient food system

Consequences of food waste accumulation

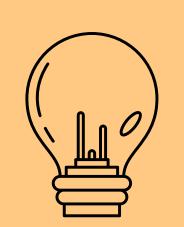
Idea: Insects as waste managers

Literature gap: Barriers to adoption in insect farming not well known, nor are strategic solution





Highlight core barriers for food waste adoption in insect farming from theory and practice



Propose strategies how to overcome these

Create guidance for entrepreneurs, decisionmakers and research

THEORY

Historical evolvement of waste valorization

Circular Bio-Economy, link to insect farming

Barriers (from

literature)

Policy

3

Composition of streams

Food safety Organization



METHODOLOGY

Qualitative approach

Semi - structured interviews

Entrepreneurs

Researchers



Consultants



Current substrates / feed use causes feed-food-fuel competition

Manifold use cases of insect products



Main **barriers**: Regulatory, Knowledge, Finance, Organization

Majority of low-value streams prohibited for use (manure, food waste, human fecies)

Strategies to increase adoption: Account for local context,

Focus on hierarchy of valorization, Closed-loop models, Chain organization,

Insects as waste managers

CONCEPTUAL MODEL

Circular Economy Business model features (Jonker et al. 2017)

Close the

From

Ownership

to service

orientation

material chain

Strategy I

→ systemic barriers can be overcome

Precondition: political space opens up in the midterm

Intensify utilization of products

- Focus on the lowest value streams
- Avoid feed-food-fuel competition Consider EU waste
- Strategy II Reorganize the food waste chain
- Reverse logistics Collection, Pretreatment, Storage

hierarchy

Strategy III

model

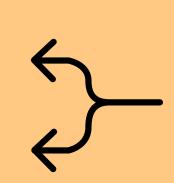
- Using what's locally available & reconsider the business
- Consider the context (global south)
 - Small-scale & Closed-loop Modular & Decentralized

IMPLICATIONS



Systemic barriers expected to overcome in the midterm

Reorganization of food waste START and general low value streams needs proactive approach



Guidance for research and practice (model)

