Land and manure exchange within a network of arable and livestock farmers

Geographical scope: North-east Netherlands

Organisation name: Wageningen University & Research (WUR)

Number of participating farmer: Two main clusters: Cluster A with four farms (two mixed, one dairy, one arable/poultry) and Cluster B with two farms (one arable, one dairy)

Total budget: MIXED project
Funding: Horizon 2020

A bit more about the Case Study

The Dutch case study focuses on collaboration between arable and livestock farmers in the north-east Netherlands, emphasizing land and manure exchange. This long-standing cooperation reduces costs, improves crop rotations, and promotes circularity by enabling efficient resource use. Farmers share land, manure, labor, and machinery, creating a network that is based on mutual trust rather than purely financial interests

Key goals include calculating cost prices, measuring circularity, and identifying ways to strengthen collaboration further. The initiative highlights how regional cooperation can enhance sustainability and resilience in agricultural systems

Field workshop in the Dutch network, 21 November 2022

Highlights

- Focuses on land and manure exchange between arable and livestock farmers to promote circularity
- Builds on mutual trust and long-term cooperation, improving crop rotations and resource use
- Develops innovative solutions through joint data sharing, cost analysis, and optimization models

Website and project information

https://projects.au.dk/mixed/networks-national-teams/the-netherlands

https://projects.au.dk/mixed/

Key outcomes and insights

Innovative features

The Dutch case study fosters collaboration between arable and livestock farmers through resource exchange and joint decision-making. Key innovations include detailed flow diagrams to visualize cooperation, cost analysis for crop production, and farm optimization models to assess circularity. By emphasizing mutual trust and data sharing, the project promotes efficient resource use and strengthens farmer networks

Environmental and socio-economic benefits

The initiative enhances environmental sustainability by improving circularity, reducing waste, and optimizing resource flows like land and manure. Socioeconomically, it strengthens rural communities through collaboration, cost savings, and better crop rotation planning, making the system more resilient and sustainable for future generations

Good practices & Lessons learned

Problem 1. Lack of overview of collaboration flows
Farmers lacked a clear understanding of the flows of resources (land, manure, labor, and machinery) within their clusters, making it difficult to optimize collaboration

Solution 1. Create detailed flow diagrams to map resource exchanges within and between clusters. These diagrams, developed during field workshops, helped visualize cooperation patterns and identify opportunities for improvement

Problem 2. Differences in cost prices and unclear economic impact
Farmers wanted to understand why cost differences existed between farms and how these differences could be explained or addressed

Solution 2. Conduct farm-level cost price calculations for different crops and compare results across farms. This analysis helped farmers identify factors influencing costs and facilitated discussions on improving efficiency

Problem 3. Unclear degree of circularity
Farmers were uncertain about how circular their current farming systems were and how they could improve circularity at the cluster level

Solution 3. Assess the degree of circularity at cluster level, using data analysis and farm-optimization models to evaluate resource flows and efficiency

Problem 4. Limited communication and joint decision-making
Despite years of collaboration, farmers had never gathered as a full group to discuss strategies, leading to fragmented decision-making

Solution 4. Organize regular field workshops to bring all stakeholders together. These workshops facilitated open communication, collaborative planning, and the development of innovative strategies, such as joint crop rotation optimization and better manure management

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