Participatory research to identify inefficiencies and challenges across Scottish ruminant supply chains

Author: Holly Ferguson

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Overview

This research used participatory approaches to identify inefficiencies, challenges and strengths across Scottish ruminant supply chains. Stakeholders from across beef, dairy, sheep and wider industry contributed their perspectives.

The findings highlighted both shared and sector specific challenges, the complexity of the supply chain and the importance of incorporating stakeholder views into policy development.

Main Findings

Stakeholder responses (n=339; beef, dairy, sheep and wider industry) highlighted common inefficiencies and challenges across Scottish ruminant supply chains. Many of the barriers identified sit outside farmer control, particularly those relating to policy and market conditions, making them difficult to address at farm level.

Perceptions of challenges varied across the supply chain, demonstrating the complexity of the systems and difficulty in identifying solutions that work for all actors. Environmental policies, including emissions regulations, carbon measures and land use schemes, were widely perceived as a threat to the sector, despite the need for substantial greenhouse gas (GHG) reductions being noted.

All sectors identified their ability to utilise poor-quality forage and convert non-human edible material into high-quality food as a key strength. However, poor public perception of ruminant production, alongside a lack of understanding of farming systems was consistently highlighted as a major risk. Labour availability, difficulty attracting new entrants and concerns around mental health challenges were consistently raised as key threats.

- Stakeholders identified **shared inefficiencies and strengths** across Scottish ruminant supply chains
- Environmental policies and emissions reduction measures were widely perceived as a **threat to farm viability**
- Uptake of mitigation measures remains limited, suggesting barriers beyond profitability and a need for **better incentives and clearer communication of benefits**
- Ruminant systems play a key role in utilising **Less Favoured Areas** and converting **low-quality forage** into **high-quality food**
- **Poor public perception,** lack of understanding of ruminant systems, **labour availability and mental health concerns** are seen as major risks to the sector
- Many key challenges **sit outside farmer control**, especially policy and market conditions

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Introduction - what are the strengths and challenges within the ruminant supply chain in Scotland?

Ruminant systems in Scotland operate across diverse environments, including large areas of Less Favoured Land. These systems play an important role in food production by converting low-quality forage to human-edible products but face increasing pressure to reduce greenhouse gas emissions, alongside maintaining productivity and economic viability. At the same time, farmers face market volatility, labour constraints, and poor public perception. Understanding inefficiencies across the supply chain is essential to support both environmental and economic sustainability.

What was the aim of the study?

To identify key inefficiencies and strengths at farm and supply chain level across Scottish ruminant sectors, using participatory research methods with key stakeholders (e.g., farmers, tech companies, levy boards) and provide policy recommendations to improve uptake of technologies to alleviate these challenges.

Outcomes

Environmental measures are perceived as a threat

Across all sectors, stakeholders identified environmental policies, including emissions regulations and land use schemes, as potential threats to farm viability. This reflects concerns about their impact on profitability and the future of the sector, particularly given the scale of emissions reductions required.

Uptake of mitigation measures is limited

There was a clear perception that farmers are reluctant to adopt GHG mitigation strategies. Whilst some measures may offer efficiency gains, barriers such as uncertainty, lack trusted information and unclear financial benefit were identified as limiting uptake.

Ruminant systems have unique Strengths

All highlighted the role of ruminant systems in utilising poor-quality forage to produce high-quality food. This is important in Scotland, where a large proportion of agricultural land is classified as Less Favoured Areas.

Public perception is a key challenge

Poor public perception and a lack of understanding of ruminant systems were consistently identified as threats across the supply chain. Whilst improved education and communication may address some concerns, some are likely to persist.

Labour and wellbeing challenges

Labour shortages, difficulty attracting new entrants and mental health concerns were highlightd by all. Improving quality of life for those working in the sector is important for ensuring long-term sustainability.

Policy Implications

- Uptake of mitigation measures limited by **risk, uncertainty, and lack of trusted information**, not just profitability
- Where measures provide a clear ROI, policy should focus on **advice, demonstration, and access to finance**, rather than subsidy
- Where measures deliver public benefits but limited private return, **targeted incentives or payments** may be required
- Communicating **co-benefits (productivity, efficiency)** could increase uptake
- Improving **public understanding** of ruminant systems may help address negative perceptions

For more information on this work please contact:
E:holly.ferguson@sruc.ac.uk

W: https://sefari.scot/research/

@SEFARIscot info@sefari.scot

Scottish Government
Riaghaltas na h-Alba
gov.scot