

Towards sustainable and circular farming: lessons from the socio-economic perspective

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Who are we?

- Business models
- Transition support
- Nature inclusive agriculture



- Monitoring and evaluation
- Micro economic analysis
- Structural change



- Sustainability initiatives
- Sustainable dairy
- Sustainability monitoring

Introduction

- Global quest for sustainable agricultural and circular food systems
- EU: Green Deal, Farm-to-Fork, NL: Circular Agriculture (government vision)
- Needs a rethinking of current farming systems and structural developments

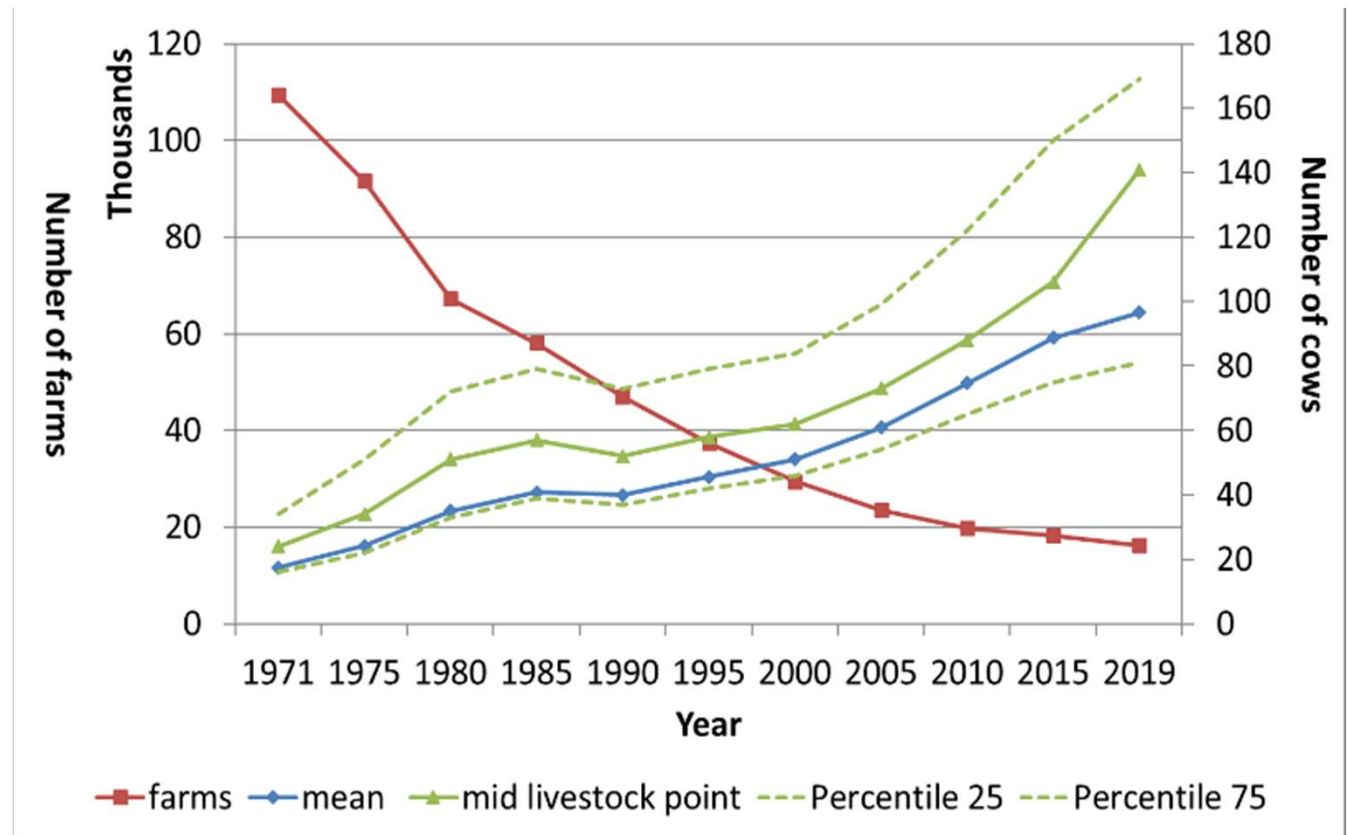
State of the art of the transition to a more circular agriculture

- Lessons from a socio-economic perspective
- With a focus on dairy
- Research agenda



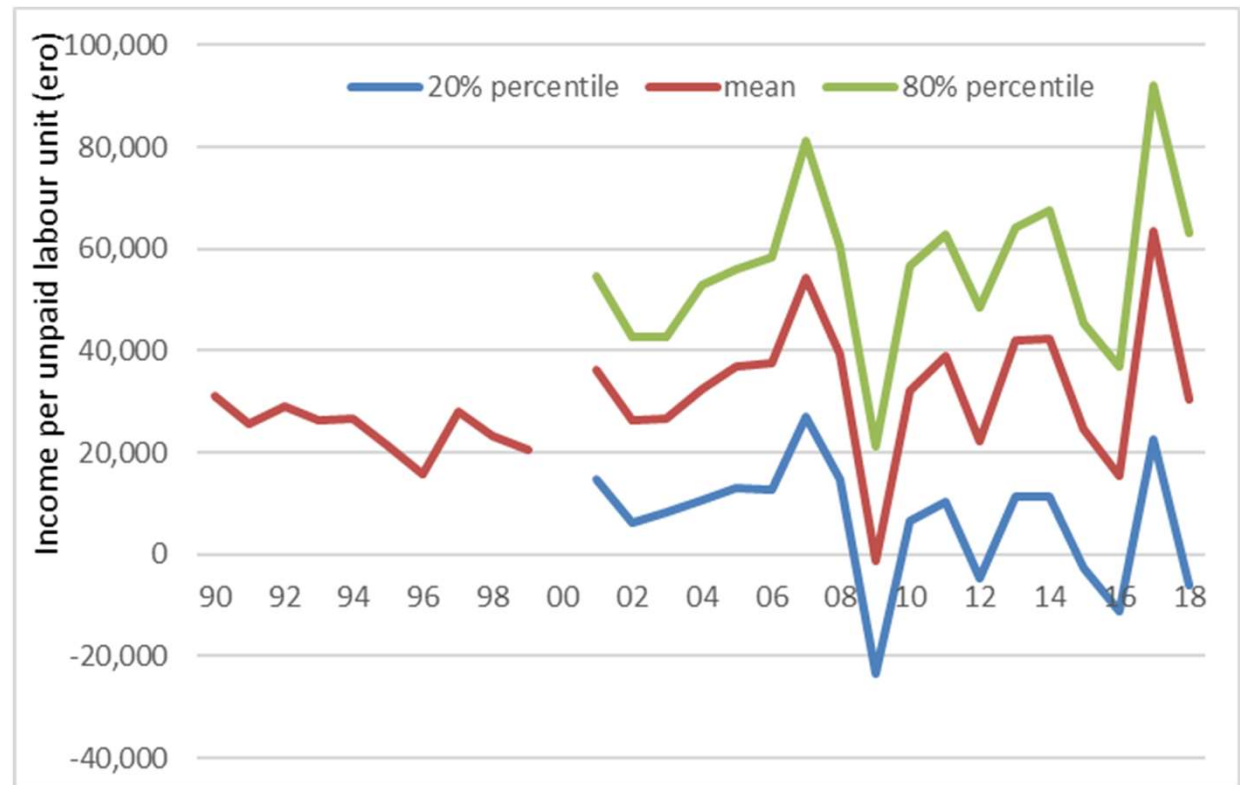
Structural change in the dairy sector

- Continuous yearly reduction of number of farms
- Steady increase in average number of dairy cows per farm
- Strong increase in mid livestock point



Development of income levels in the dairy sector

- Income levels have not changed
- Increased volatility since 2006
- Increase in size of farm to maintain income levels



Structural change and sustainability

- Economic incentive to increase the scale of production
 - Larger farms show better economic results and a lower solvability
 - Environmental impact more dependent on choice of indicator
- Sustainability objectives can contribute to the pressure to increase scale of production
 - Unclearity of economic impacts
 - Depending on the measures taken
 - Investments favour large farms



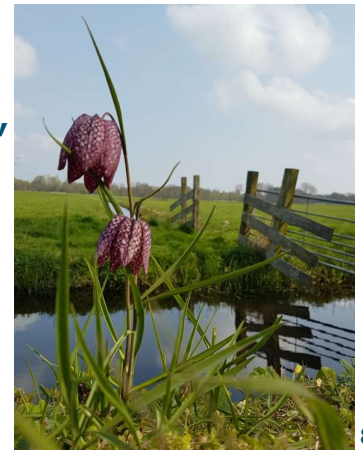
Sector initiatives to improve sustainability

- Large companies in the agri-food domain express high ambitions in the realization of sustainable and circular agriculture
 - Translating into actions at farm level easier said than done
- Addressing sustainability issues and achieving progress requires broad cooperation within supply chain and a programmatic approach
 - i.e. Dutch Sustainable Dairy Chain initiative
- Wageningen Economic Research contributed to the
 - Monitoring of the sustainability objectives
 - Sustainability programs for dairy companies
 - Incentives essential in programs (RESET model)



Sector initiatives to improve sustainability (2)

- Example of a market concept: On the Way to Planet Proof
 - Farmers meet sustainability criteria to achieve higher prices
 - Focus on national market and products with high shelf visibility
- 'Deltaplan' Biodiversity Restoration
 - Sector and governmental and non governmental organizations
 - To convert the trend of biodiversity loss
 - Focus on improved business models, coherent legislation, knowledge and innovation and regional cooperation
 - How can additional costs be financed?



Business models for circularity: options for farmers

- Given the focus on price and statutory requirements a shift to a more value-oriented food system cannot be taken for granted
- New business models are needed to make this shift
 - How to create value from nature
 - Strong need for an integral approach
(climate, biodiversity, nitrogen..)
- Lack of appreciation of eco-system services and a lack of knowledge
- Developing and experimenting are crucial in the development of business models



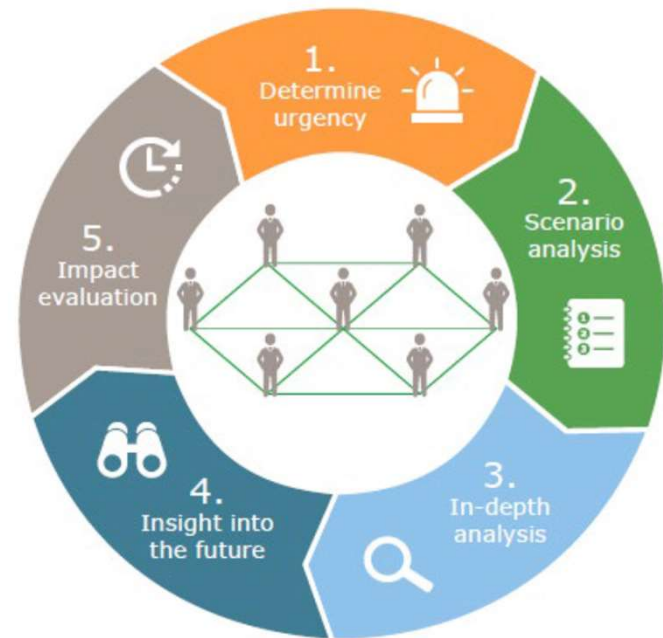
Experimenting with new business models

- Several overviews of new business models (Polman and Dijkshoorn 2019; Hoes et al. 2020)
- 4 categories based on economic incentives
 - Intrinsic business model
 - Payment through (government) policies
 - A price premium that cover additional costs
 - Integration into a broader business concept
- Optimal business model is unique for every company (often a combination of business models)
- How to upscale successes to a larger group of farmers?



Methods to support the transition

- Canvas model to support entrepreneurs
 - To identify and test various business ideas to create value
- Transition Support System (TSS) for a regional approach –
 - Jointly explore potential future pathways towards a sustainable, circular agriculture
- Clarity, consistency and stability of policies essential for individual farmers



Source: Dijkshoorn-Dekker et. al (2019)

Lessons and discussion

- Economic incentives have to led to an increase in scale of production. Sustainability policies could strengthen this development
- Some farms are able to invest in sustainability measures, other farms need to adopt new business models
- Lot of experimentation with new models; innovators and mainstream both have a role; Policy should support both
- Involvement of citizens, consumers, farmers, government and sector required
- Need for knowledge on business models, an integral approach and clarity in policies

Research agenda

- Clarity in objectives and development of indicators to measure and monitor circularity
- How to upscale the successful examples of innovators and niche markets to main stream?
- Does the farmer get a fair compensation for the extra costs and efforts to produce in a more sustainable way?
- Who should pay for the transition? Willingness to pay is still limited (especially in international context)
- Possibilities of financial policy measures to support the transition (support payments or true prices to give proper incentives)

Further information

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