
Sustainability of grazing: effect of grazing on economy, environment and society

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Why grazing?

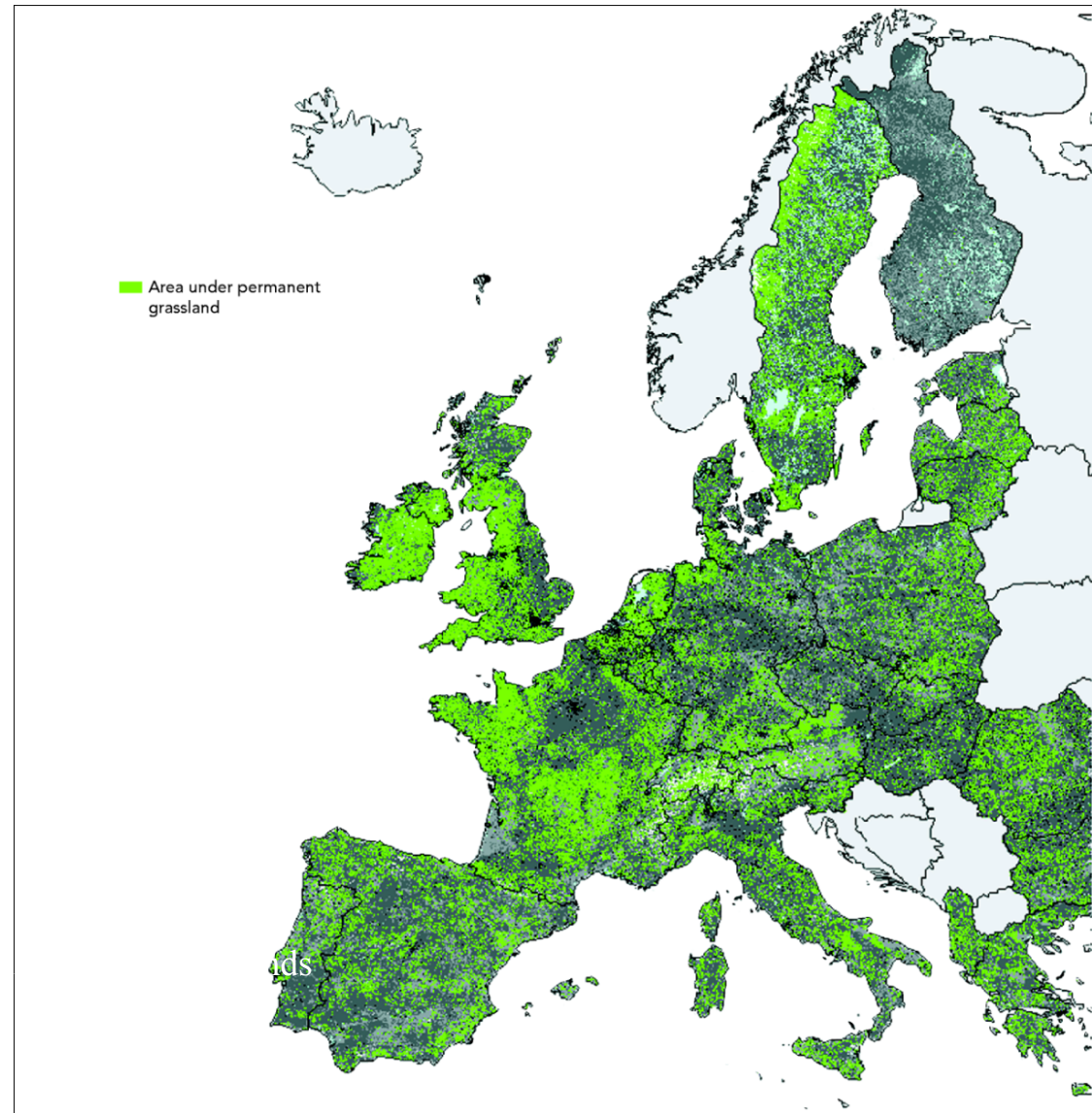
- Forage is the main feed for dairy cattle
- Predominantly grazed
- Grazing systems are important parts of the landscape



Today

- Grazing in Europe: trends and developments
- Grazing and society
- Grazing and environment
- Grazing and economy

Grasslands in Europe



Grazing in Europe

- Data on grazing hard to get
- Several surveys EGF Working Group “Grazing”
 - Educated guess on grazing dairy cattle
 - No statistical data

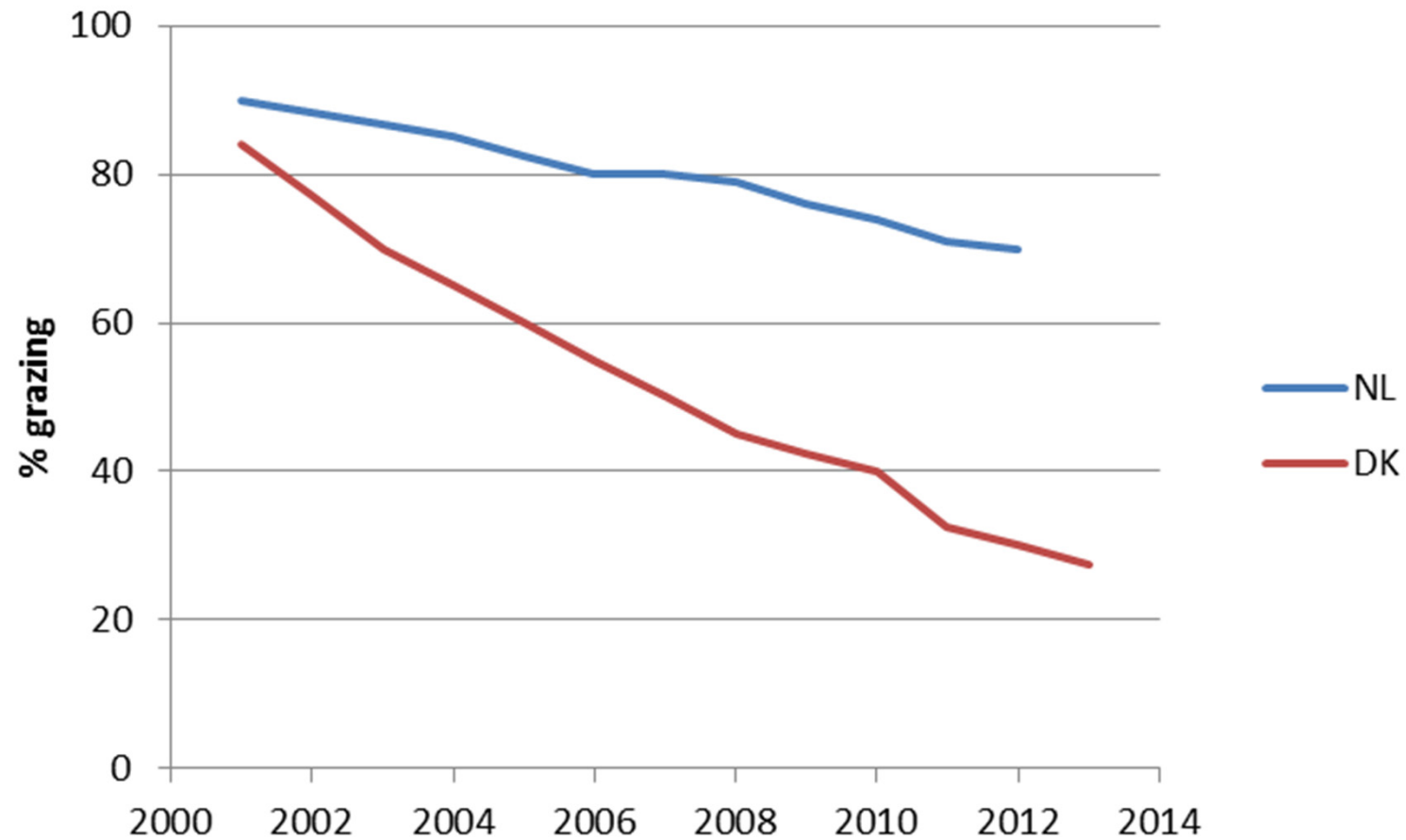
More than 50% grazing

- Sweden
- Finland
- Norway
- Ireland
- Luxembourg
- France
- Switzerland
- The Netherlands

Less than 50% grazing

- Austria
- Estonia
- Czech Republic
- Hungary
- Bosnia and Herzegovina
- Slovenia
- Spain
- Greece
- Denmark

Denmark and the Netherlands



Grazing in Europe

- Country specific
- East and South < North and West
- In general, the popularity of grazing is declining
 - Less cows
 - Less days yr⁻¹
 - Less hours d⁻¹

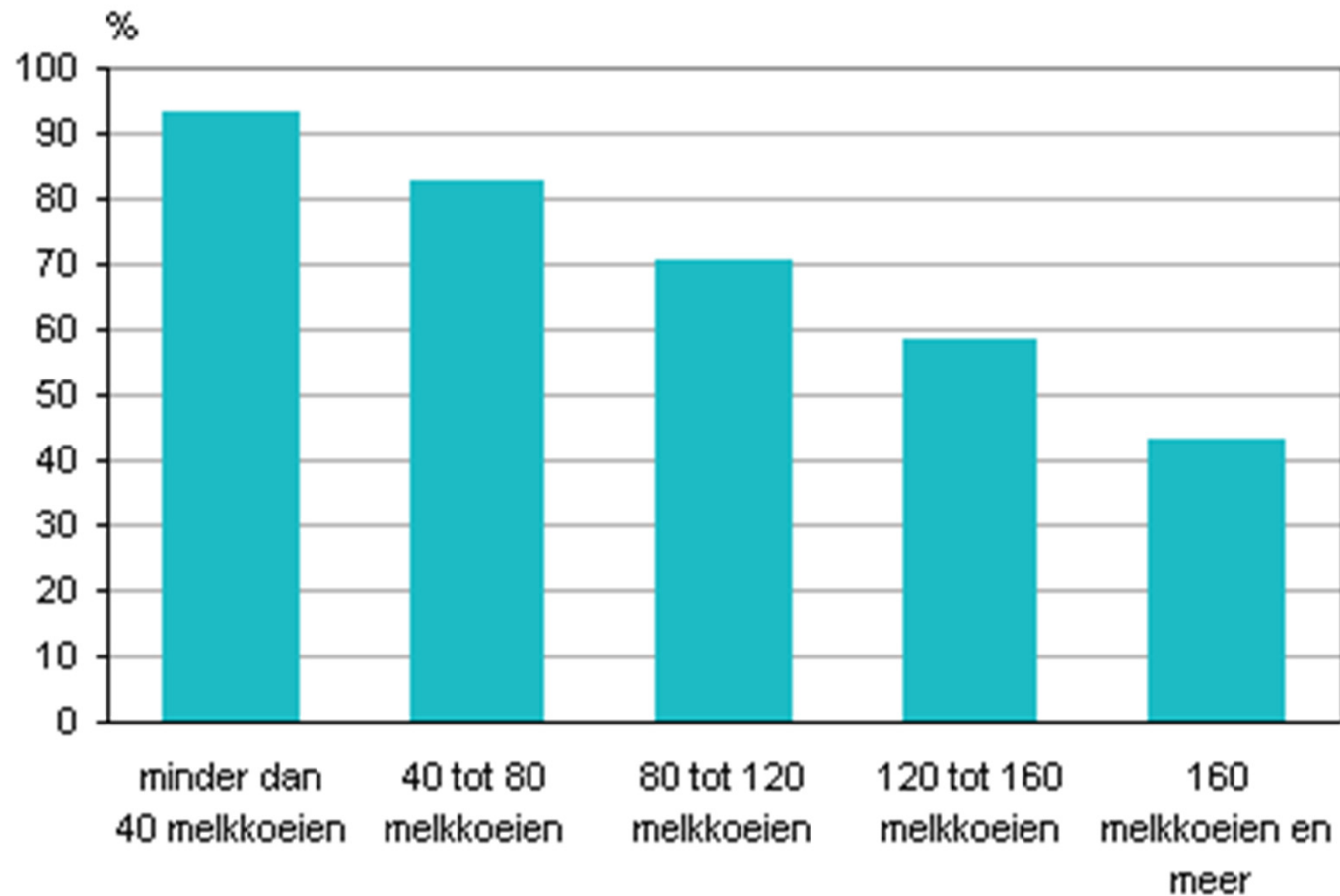
Reasons for less grazing



- To control rations and optimise grassland utilisation
 - When fed on grass only, DMI = enough to meet requirements of maintenance and 22-28 kg milk
- Increased herd size
- Increased use of automated milking systems
- Reduced grass growth in summer time
- Need to reduce mineral losses
- Labour efficiency



Effect of herd size



Bron: CBS



Less grazing

■ Is this a matter of concern?

Society



Grazing system and society

- Positive image of grazing animals in the landscape
- Biodiversity of the landscape
- Society associates grazing with animal welfare



Effect of grazing on animal welfare

- Health, natural behaviour
- Natural behaviour: requirements for food, water and rest, and also behavioural needs such as movement, social behaviour, foraging and play
- Grazing gives much more scope for natural behaviour than conventional cubicle sheds



Effect of grazing on animal welfare

- Reduces risk of mastitis
 - Benefits claw health
 - Results in large fluctuations in diet composition
 - Frequent milking more difficult
 - In the field cows are exposed to rain and sun
 - In the field increased risk of the transmission of infectious diseases such as infectious bovine rhinotracheitis (IBR) and bovine virus diarrhoea.
-
- Easier to prevent the disadvantages of grazing than to remedy the welfare disadvantages of cubicle stalls

Stakeholder consultation

- MultiSward (2010-2014)
 - To conceive, evaluate and promote sustainable grass based ruminant production systems
 - Participation of stakeholders was one of the key objectives of the project
 - Online questionnaire to determine the stakeholders' view on the importance of grasslands in Europe

- www.multisward.eu

Online questionnaire

- Stakeholders:
 - primary producer, policy maker, research and advice most important
 - followed by NGO's (nature, environment), industry (processing, seed) and education
- 8 languages: Polish, Dutch, Italian, French, English, German, Danish and Swedish

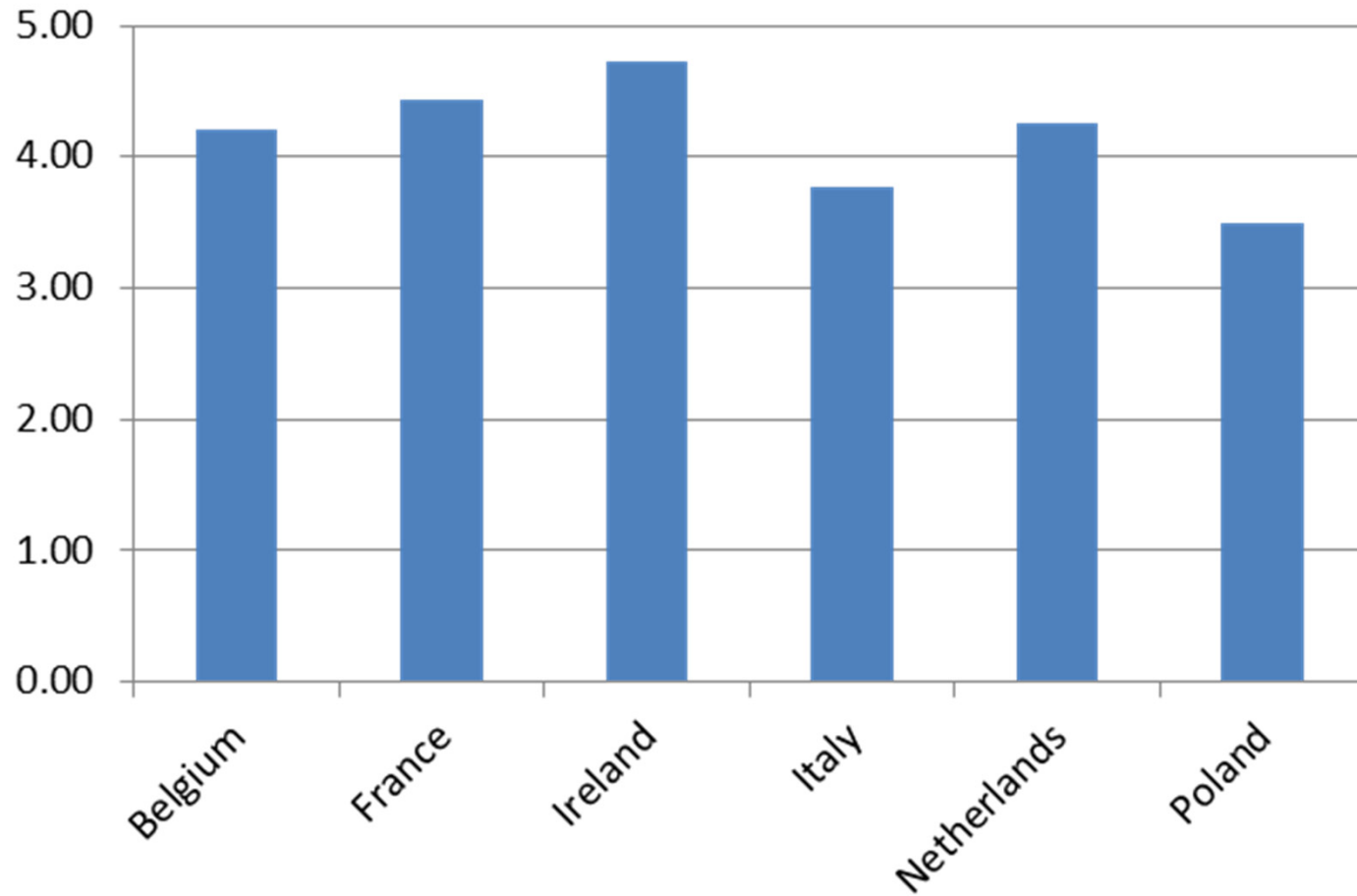
Online questionnaire

- Almost 2000 respondents
- Respondents were asked to value 42 different functions of grasslands
 - 1 = not important
 - 5 = very important

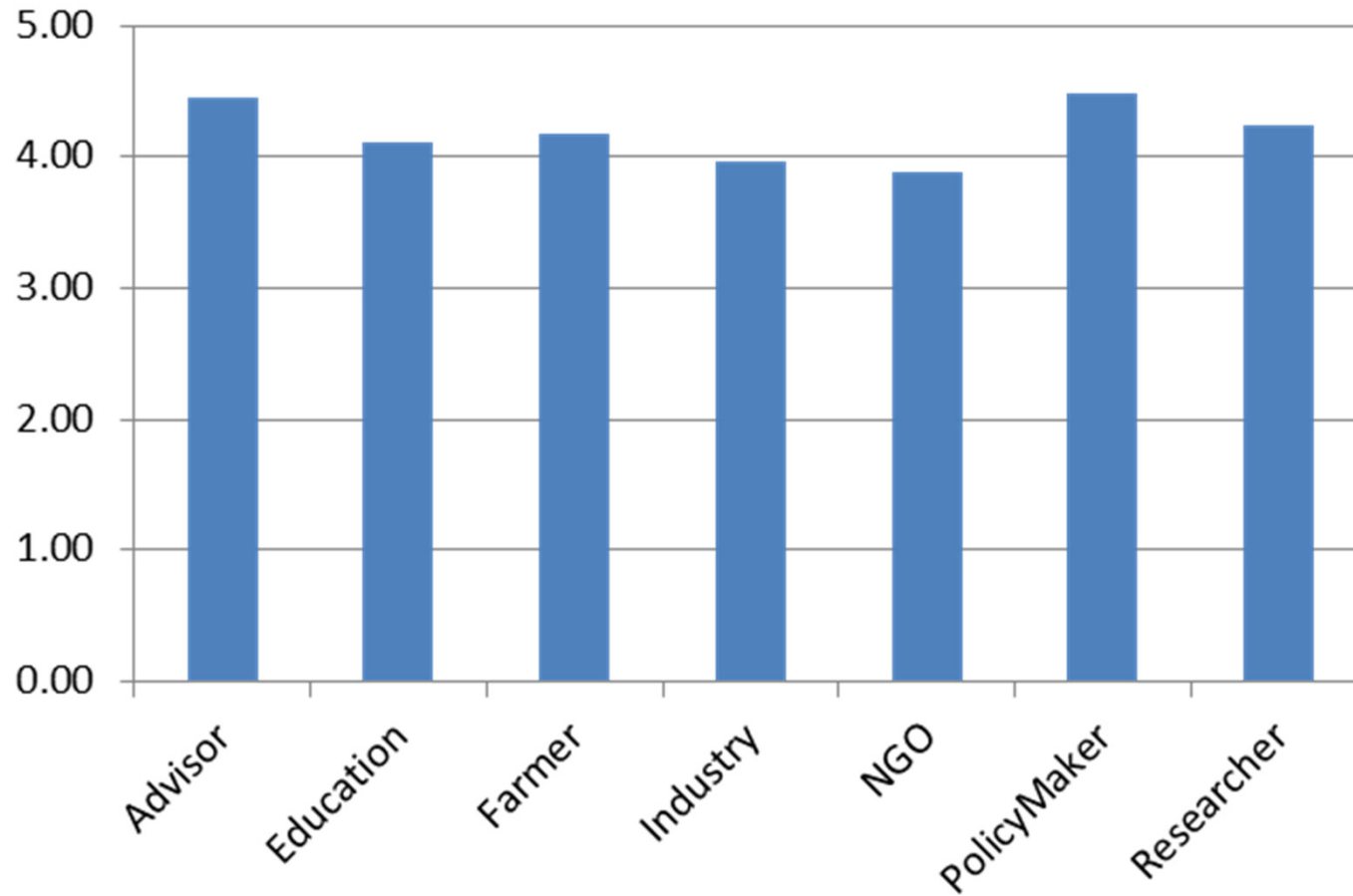
Top 5 important functions

- Grazing: 4.2
- High quality forage: 4.1
- Beauty of the landscape: 4.0
- Dairy cow milk production: 4.0
- Low cost animal feed: 4.0

Grazing - countries



Grazing – stakeholder type



the Netherlands

- 2012: “Treaty Grazing”
- Aim: stable number of grazing cows
- ~ 60 parties signed



“Treaty Grazing”

- Dairy farmers
- Dairy industry
- Feed industry
- Banks
- Accountants
- Semen industry, veterinarians, cheese sellers
- Retail
- NGO's, nature conservation
- Government
- Education and science

Developments dairy industry

- Grazing premium of 0.5 ct kg⁻¹ milk
 - Dairy farm of 1,000,000 kg milk: € 5,000
 - Definition of grazing for the premium: minimum 120 days 6 h d⁻¹

Environment

Effect of grazing on the environment

- Grazing increases mineral losses
 - Particular nitrogen (N), but also P
 - Import of N can increase by $50 \text{ kg ha}^{-1} \text{ yr}^{-1}$
- Type of nitrogen loss:
 - More nitrate leaching
 - More denitrification
 - More nitrous oxide (N_2O)
 - Less ammonia volatilisation (NH_3)



Effect of grazing on the environment

- Less energy use
- Less carbon dioxide (CO₂) emissions
- Less methane (CH₄) emissions

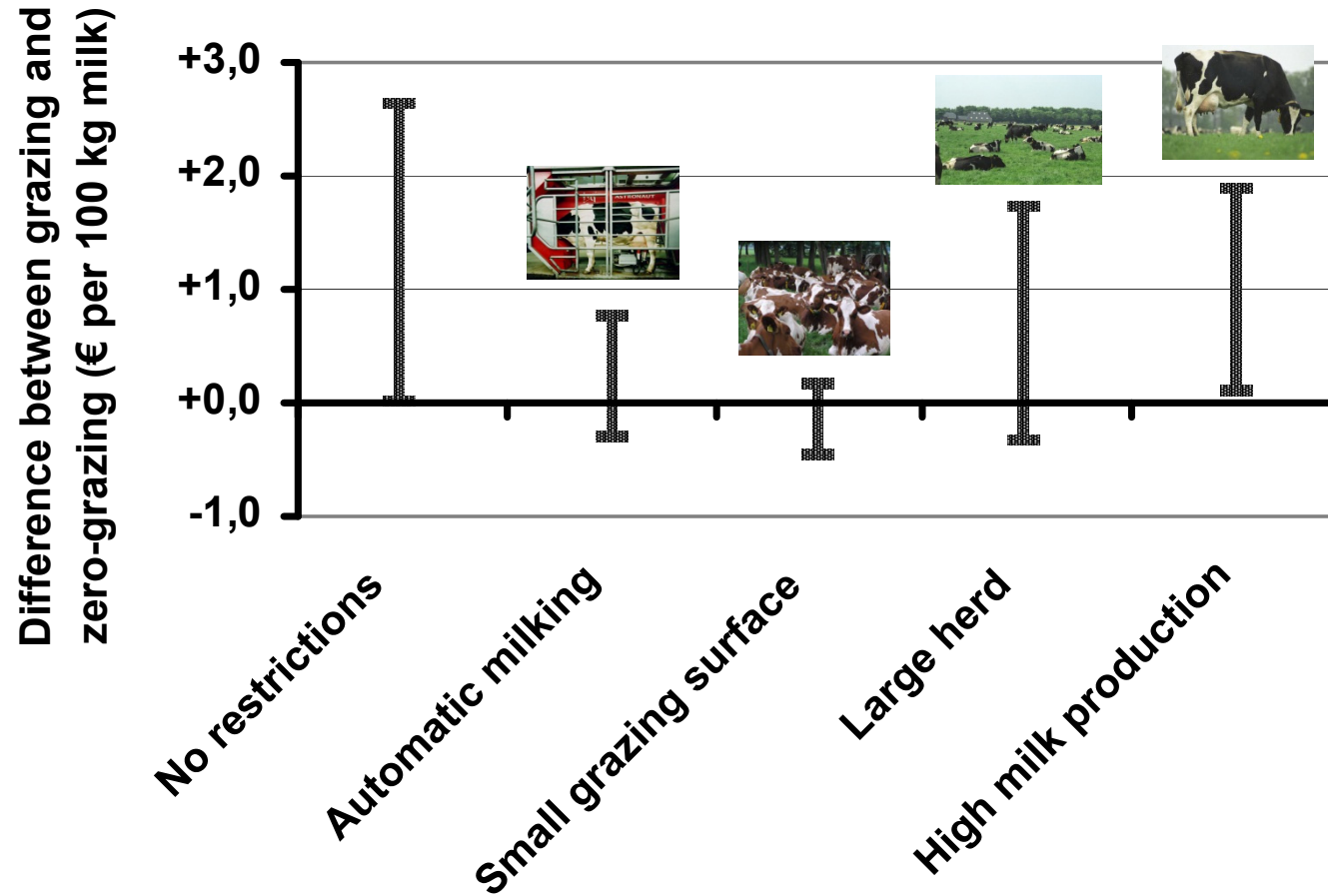
Economy



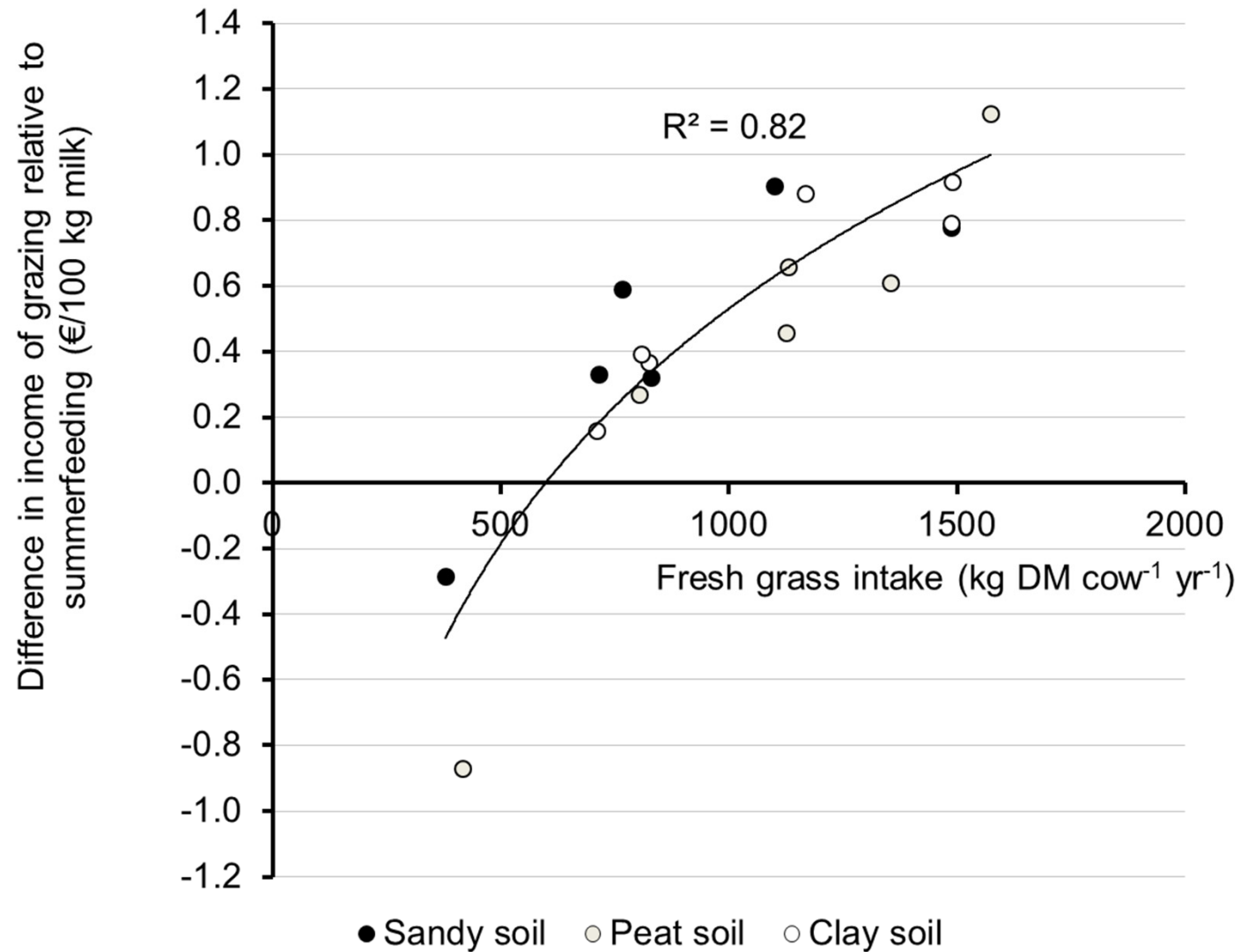
Economy

- Whole farm model DairyWise (Schils *et al.*, 2007)
- Data of commercial farms
 - Less favourable farm situations
 - Average farm situations

Economy – less favourable farm situations



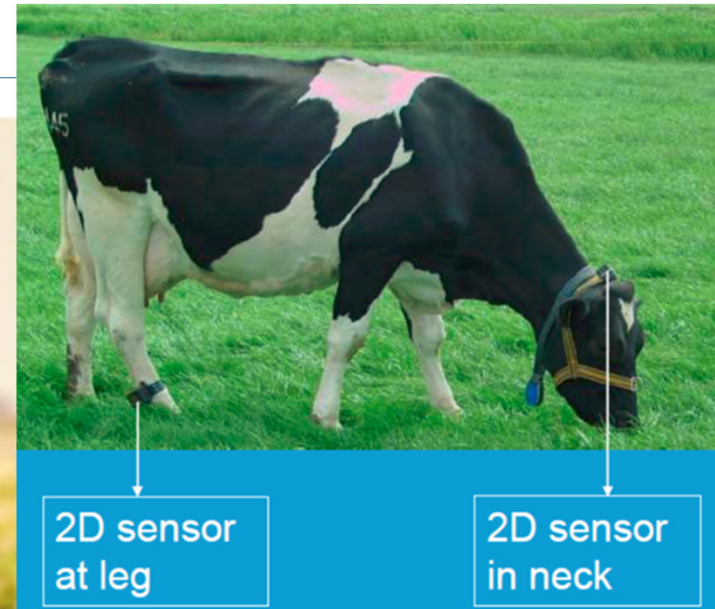
Economy – grass intake crucial factor



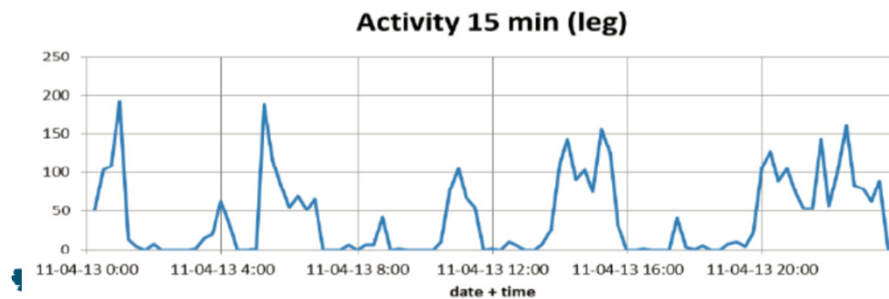
Autograssmilk

- Innovative and sustainable systems combining automatic milking and precision grazing. *Ireland, France, Belgium, the Netherlands, Denmark, Sweden*
- Develop optimum feeding strategies
- New technologies
- Increase sustainability
- Optimise economic efficiency
 - Grass intake crucial factor

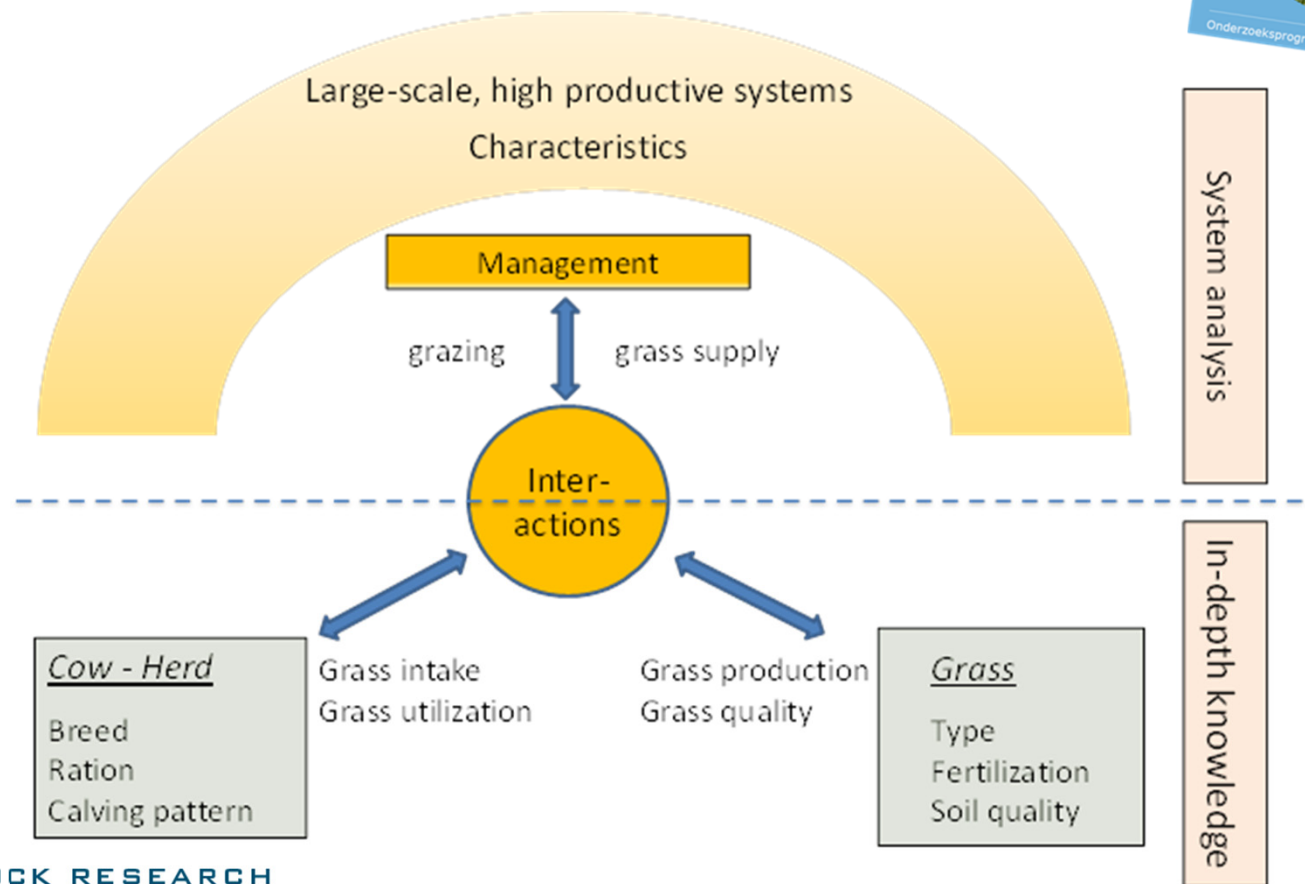
Sensor data



- Practical tool for farmers
 - Sustainability



Competitiveness of future milk from grazing from a socio-economic and ecological perspective



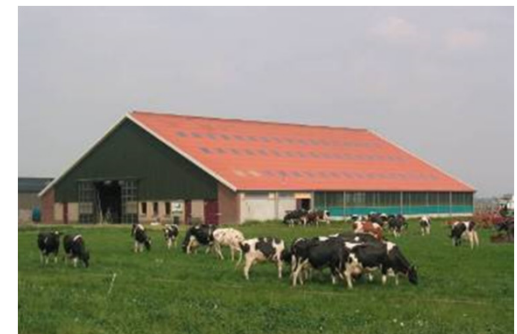
Sustainability of grazing



- Advantages and disadvantages

- Grass intake a crucial factor
 - Farm situation
 - Management
 - Farmer's attitude, preferences and knowledge

- Grazing is not a black and white story



Sustainability of grazing

Thank you!

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