

# Sustainability index for beef production in Denmark and Sweden

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# The challenge of producing beef

- \* Climate impact is high compared to other meat production systems
- \* There is a need for a broader view on beef production
- \* Our sustainability index is an example of a broader view on beef production



Source:  
Jason Clay:  
Producing beef on a  
finite planet

# The Sustainability Index

- \* Based on existing knowledge
- \* Usable for an overall evaluation across various factors such as e.g. nutrient balance, animal welfare and biodiversity
- \* Express the sustainability of beef production at farm level and in a given period, typically a year
- \* Should be able to handle more types of beef production i.e. suckler cows and bull calves from dairy

# Method

- \* The Sustainability Index was developed as a prototype for a dynamic model
- \* The evaluation was based on indicators
- \* Data was collected and registered online in an existing tool "AnalysePlatformen" ([www.analyseplatformen.dk](http://www.analyseplatformen.dk))
- \* Data from three farms in Denmark and two in Sweden were collected to test and develop the model



# The index

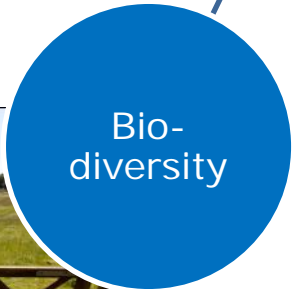
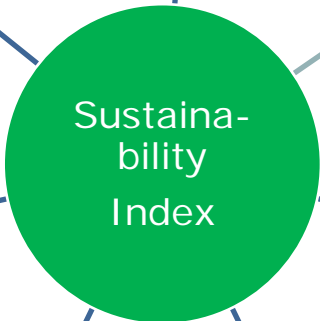
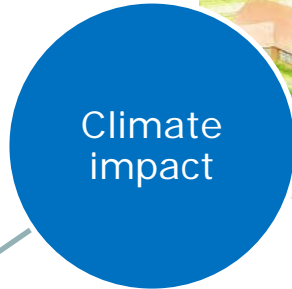


Foto: Jens Tønnesen m.fl.

# Indicators

- \* A good indicator (Halberg, 1999) must be
  - Based on generally accepted biological relations
  - Understandable and acceptable for stakeholders
  - Reflect the actions of the farmer
- \* Data used to calculate the indicators should be existing or easy to collect on the farm
  - The national cattle database
  - Fertiliser Plan
  - etc.

# Seven subindices describe sustainability

\* E.g. Biodiversity:

A high index on biodiversity means that the production contributes to maintain the biological diversity in the surroundings of the farm and promotes diversity on the area used for production



# Indicators for biodiversity



## Indicators:

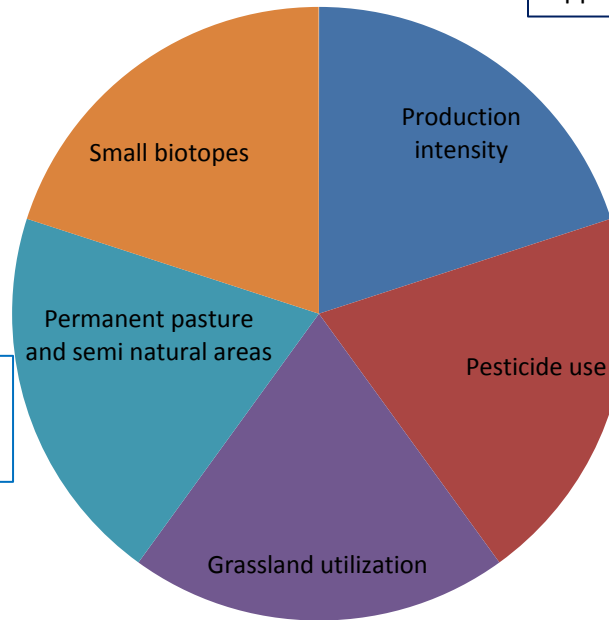
Number and m<sup>2</sup> with

- aside
- insect ridges
- wild streaks
- planted fences

in relation to total area

## Indicators:

Applied nitrogen, kg pr ha



## Indicators:

Proportion of these areas used for feed production in relation to the total area

## Indicators:

Proportion of pesticide treated forage area compared to total forage area, per cent

## Indicators:

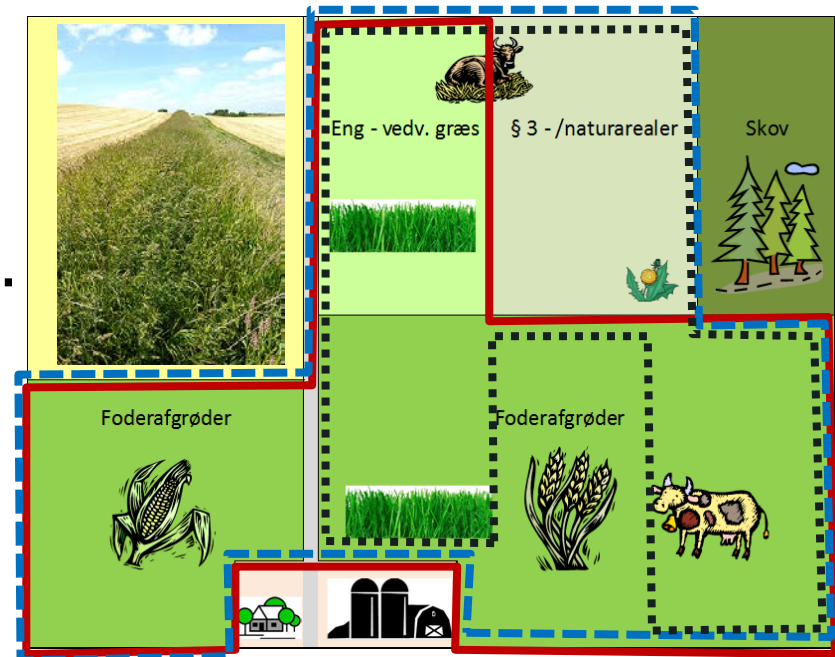
Effect on biodiversity depends on utilization.  
Rank: Grazing (best), hay and silage



# Biodiversity

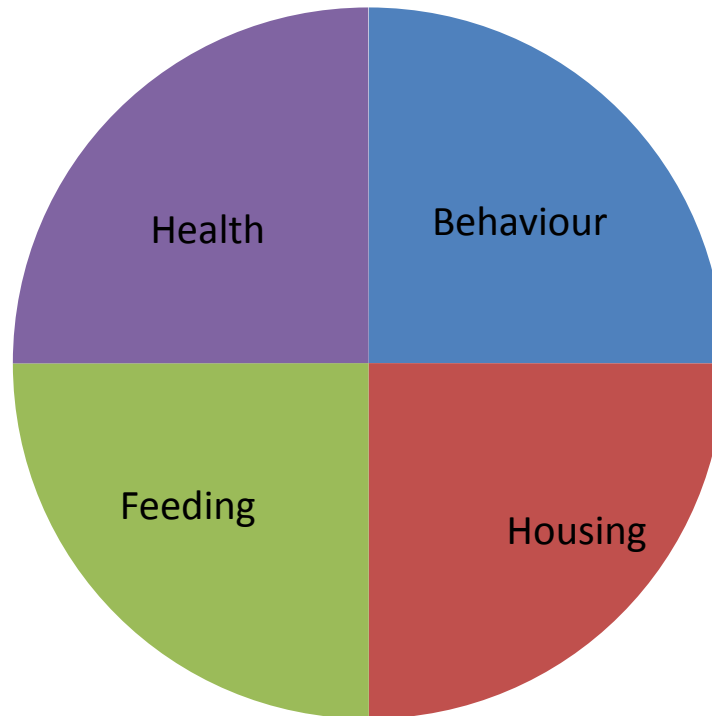


- \* Production intensity
  - Kg N applied pr. ha —
- \* Proportion of pesticide treated forage area - - -
- \* Use of areas with grass .....
- \* Proportion of feed from semi natural areas and permanent pasture
- \* Small biotopes
  - E.g. wild streaks, insect ridges and planted fences

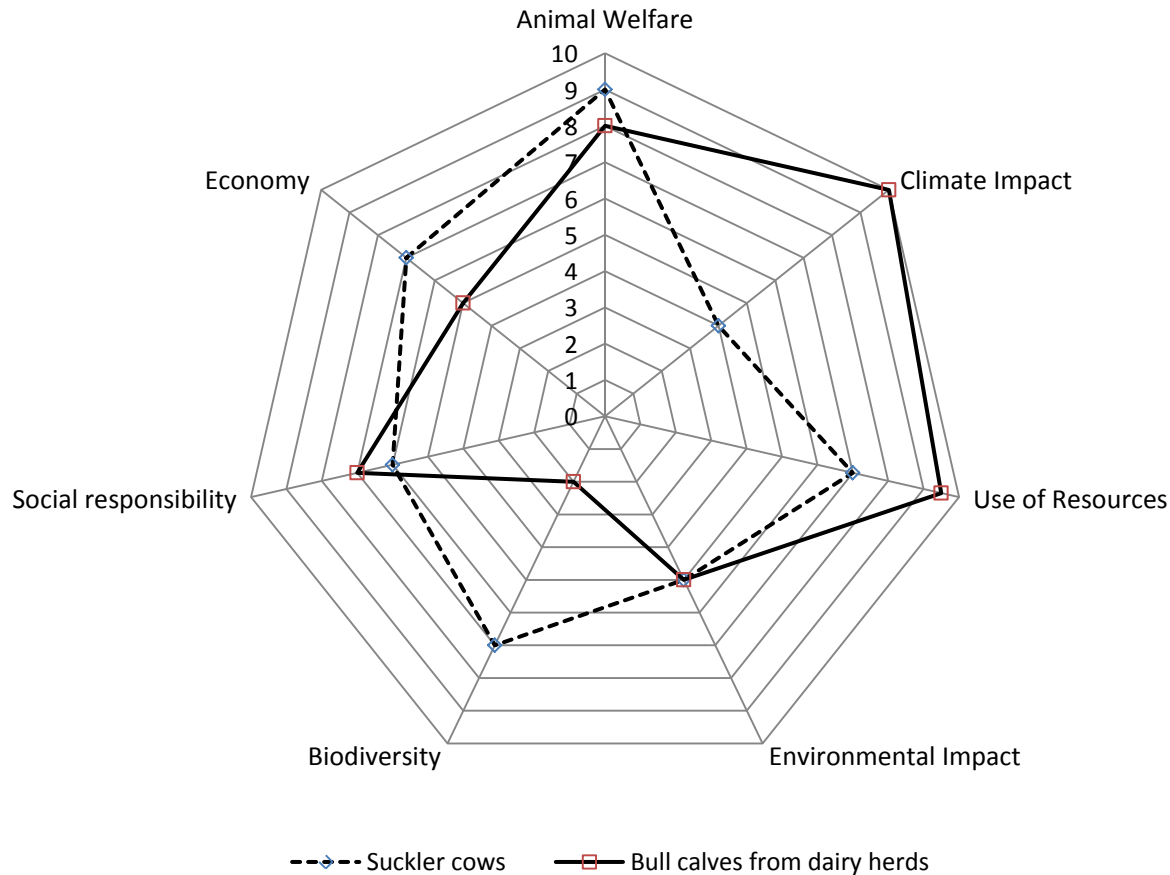


# Indicators for animal welfare

A high index expressed that the beef production was conducted in a way that animal welfare was secured no matter which production system



# Example of Sustainability Index – two different production systems



# Outcome of the Sustainability Index

## \* The farmer

- Benchmarking with other farmers
- What happens if I make changes?



## \* Slaughter houses and retail

- Documentation and marketing of sustainable beef



## \* Society/authorities

- Documentation and certification
- Identification of opportunities of increasing sustainability

# Conclusion and Perspectives

- \* The prototype for collecting data and calculating the index has been approved
- \* Further validation of the model through data from more farms
- \* The model may be adjusted and used on other animal products



# Thank you for your attention

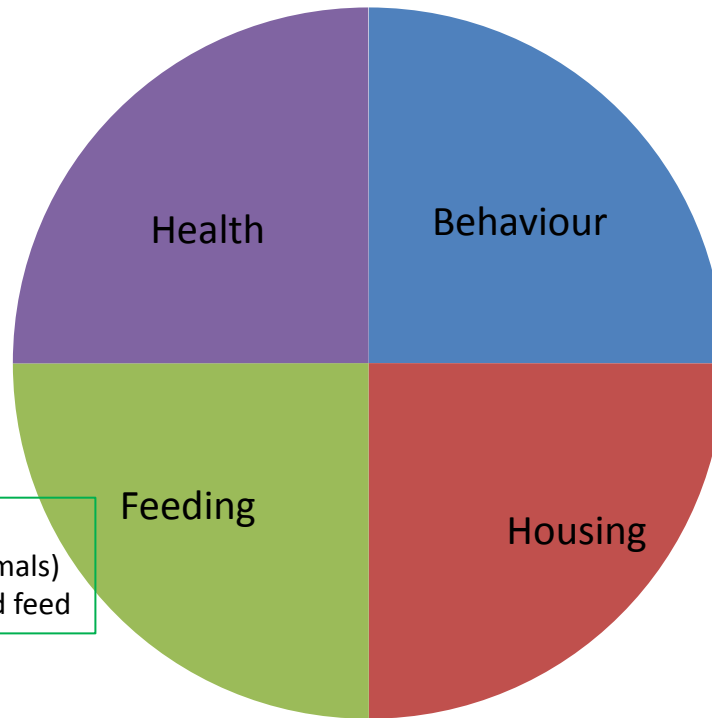


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- Indicators**
- Mortality rates
  - Treatments
  - Frequency of disease/injuries
  - Evaluation of skin/hair
  - Lameness
  - Damage to the hock



- Indicators**
- Access to pasture
  - Flight distance
  - Cow-calf relation

- Indicators**
- Body condition score (% thin animals)
  - Access to and purity of water and feed

- Indicators**
- System related
  - areal, surface i stald
  - Resting area
  - Access to shelter
  - Cattle routes
  - Rising behaviour

# Social responsibility

A high index expressed that the farmer carried out his production in a responsible manner

- \* Considering neighbours and nearby society
  - Manure management
  - Public access
  - Tidiness on the farm
  - Location of field piles
- \* Employment
- \* Work safety
- \* Global concerns
  - Use of renewable energy
  - Recycling waste

