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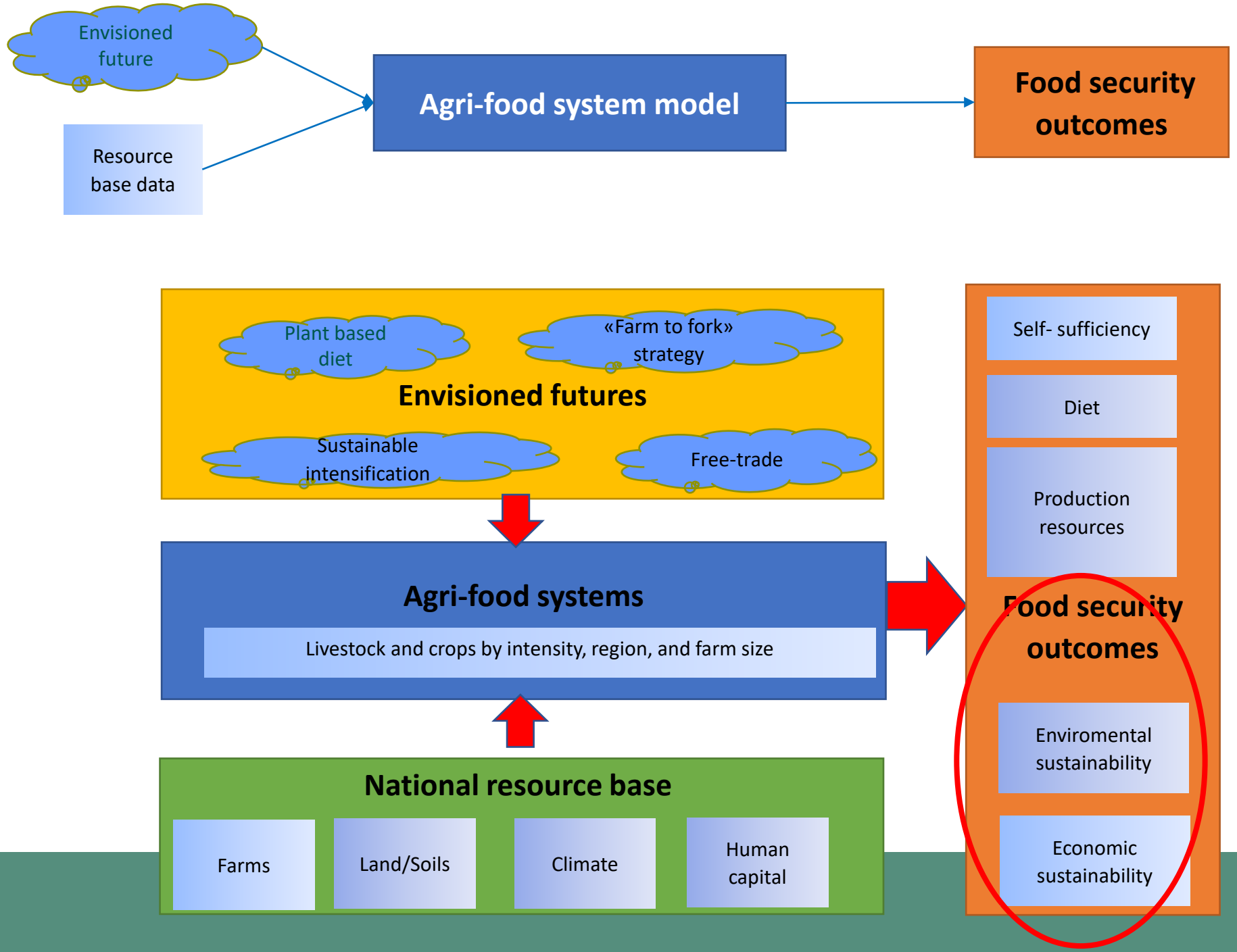
NORWEGIAN INSTITUTE OF BIOECONOMY RESEARCH

Farm accountancy data as inputs in analyses of environmental and economic sustainability of regional food production

Elena Kirsanova & Helge Bonesmo

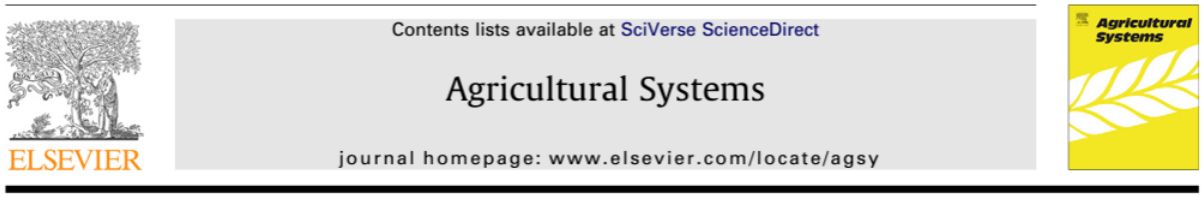
Part of a larger project: «Visions and the consequences - analysing visions for Norwegian agriculture and its consequences for food security"

- Visions of the future
- Simulating the performance of agri-food systems
- Food security assessment


Envisioned future
Resource base data
Agri-food system model
Food security outcomes
Plant based diet
«Farm to fork» strategy
Envisioned futures
Sustainable intensification
Free-trade
Agri-food systems
Livestock and crops by intensity, region, and farm size
National resource base
Farms
Land/Soils
Climate
Human capital
Self- sufficiency
Diet
Production resources
Food security outcomes
Enviromental sustainability
Economic sustainability

Farm accountancy data

Consistent farm level data


Contents lists available at SciVerse ScienceDirect

Agricultural Systems

journal homepage: www.elsevier.com/locate/agsy

Greenhouse gas emission intensities and economic efficiency in crop production: A systems analysis of 95 farms

Helge Bonesmo [a,*], Arne Oddvar Skjelvåg [b], H. Henry Janzen [c], Ove Klakegg [d], Ole Einar Tveito [e]

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Farm accountancy data excellent for

- Economic and
- Environmental sustainability


Contents lists available at SciVerse ScienceDirect

Livestock Science

journal homepage: www.elsevier.com/locate/livsci

Greenhouse gas emission intensities of grass silage based dairy and beef production: A systems analysis of Norwegian farms

Helge Bonesmo [a,*], Karen A. Beauchemin [b], Odd M. Harstad [c], Arne O. Skjelvåg [d]

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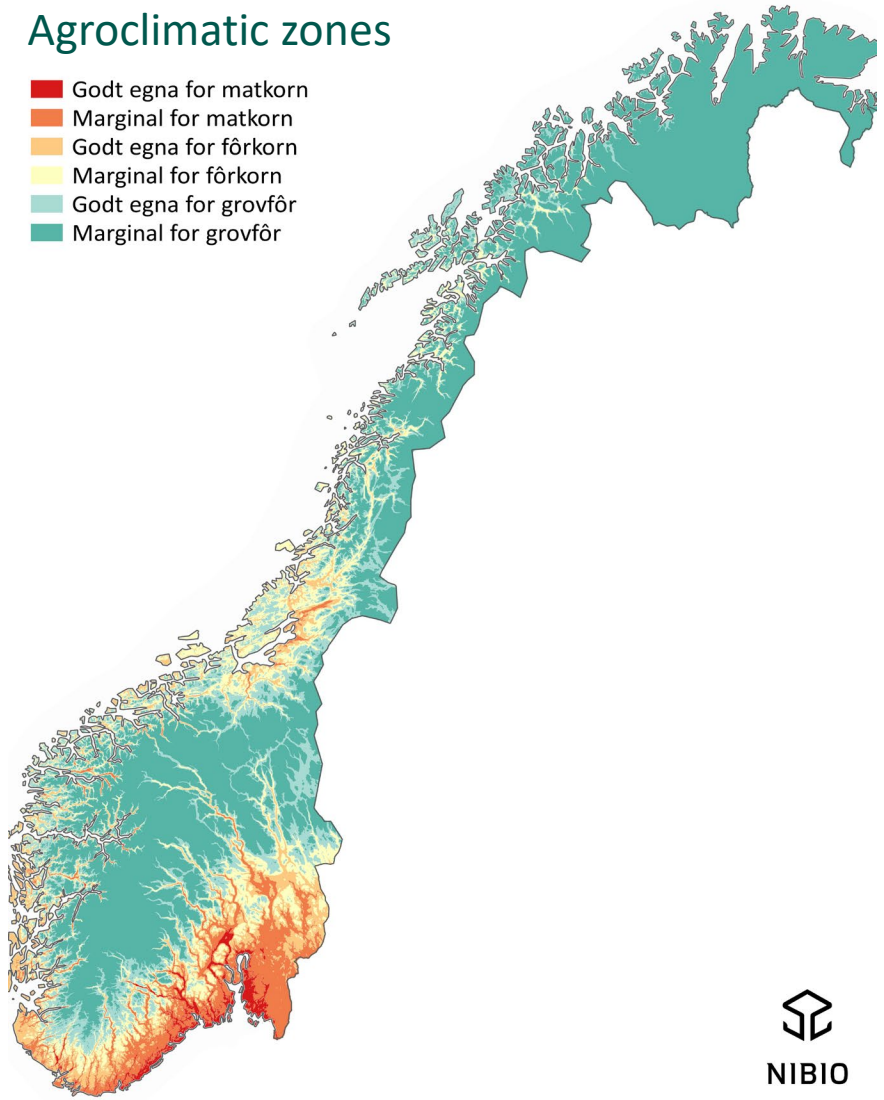
The basis for the current agricultural regions

- Agroclimatic conditions
- Maximizing outputs (food security)
- Viability of rural areas



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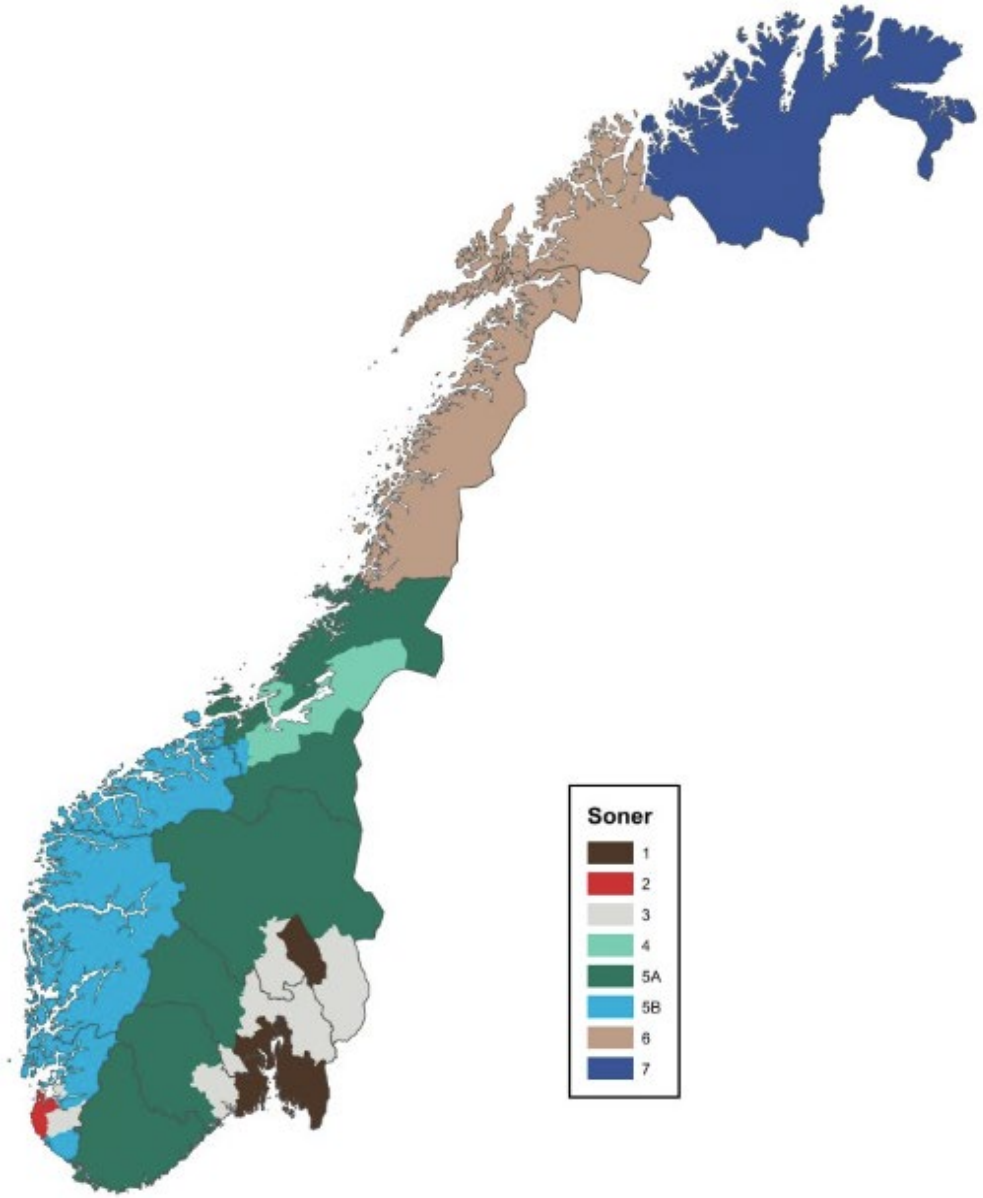
Skjelvåg, A., 1987, Vol 1, Temperaturkart laga ved minstekvadratinterpolasjon. Norsk landbruksforskning, ss. 37-45.

Challenges:

- Limited number of farms
- Many different regions and productions
- Methodology



Methodology for identifying and assigning farms to the regions:

- Input data:
    - Governmental farm payments register
    - Animal recording systems
    - Farm accountancy statistics
    - The aggregated account for agriculture

Methodology for identifying and assigning farms to the regions:

- Regional data converted to municipality scale

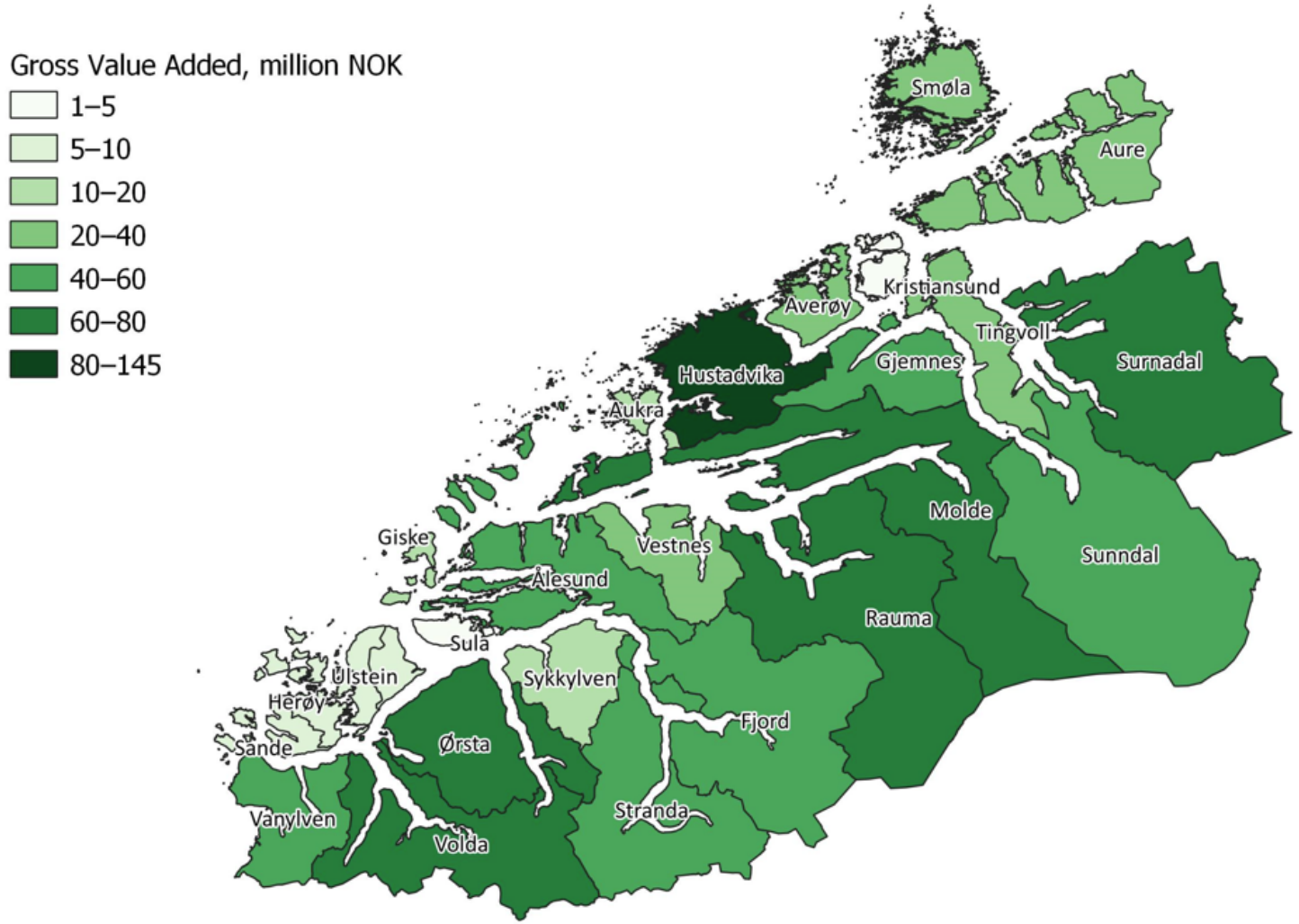
- Control:

  Validation of aggregated farms results

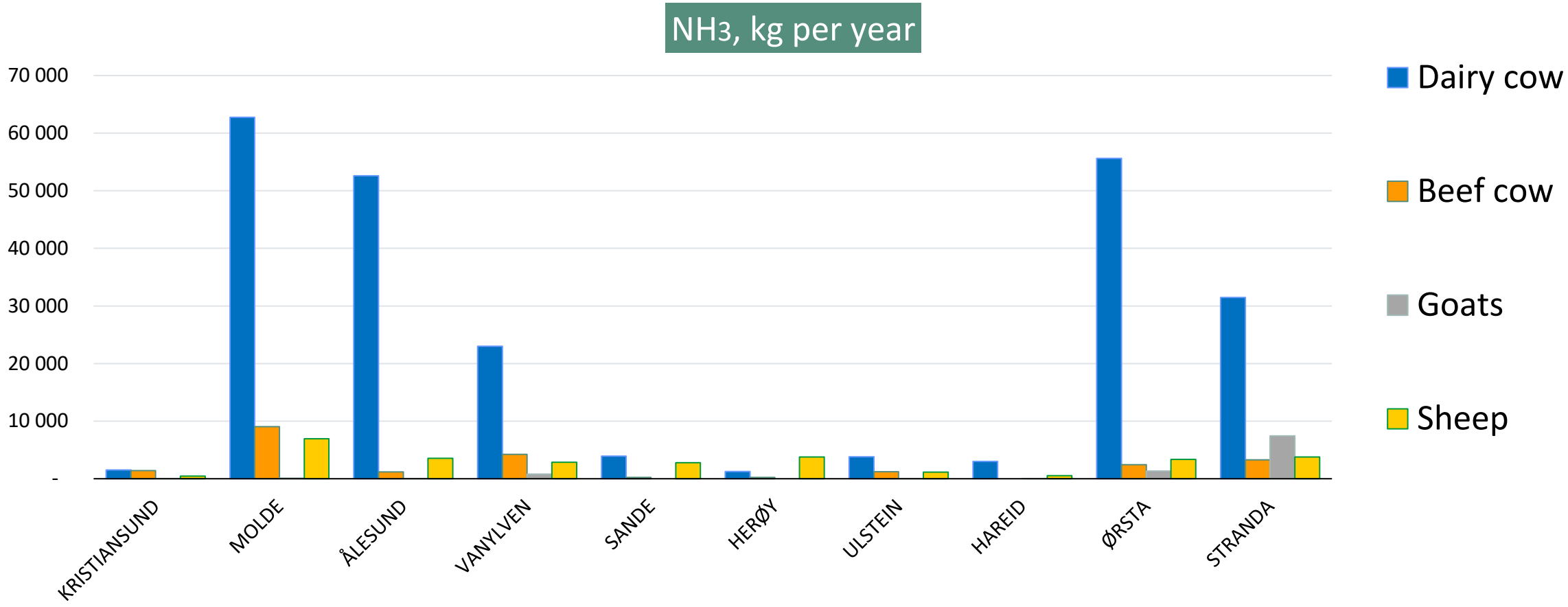
  Acceptable level +- 1%

- Outcome: Farm management data (municipality scale)

PRELIMINARY RESULTS: Value added, municipality scale



PRELIMINARY RESULTS:
N_2O & NH_3 emissions from manure use, municipality scale



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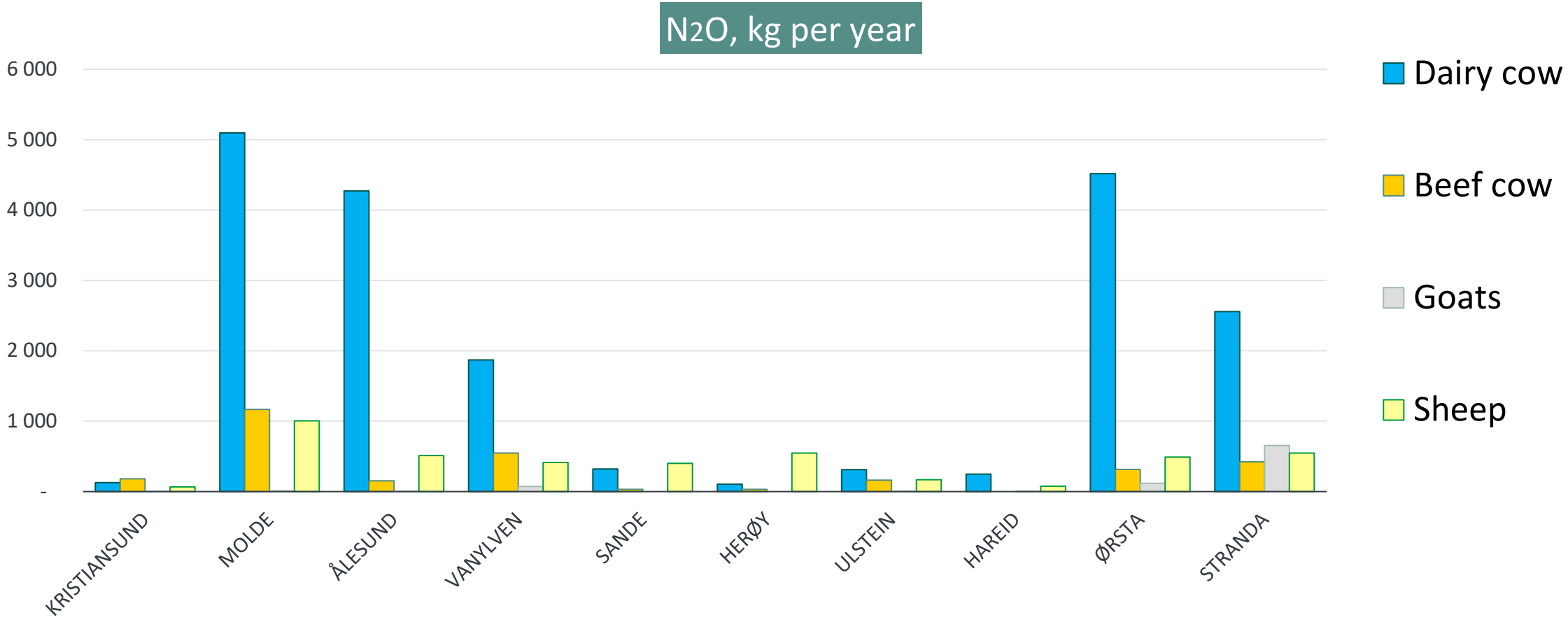
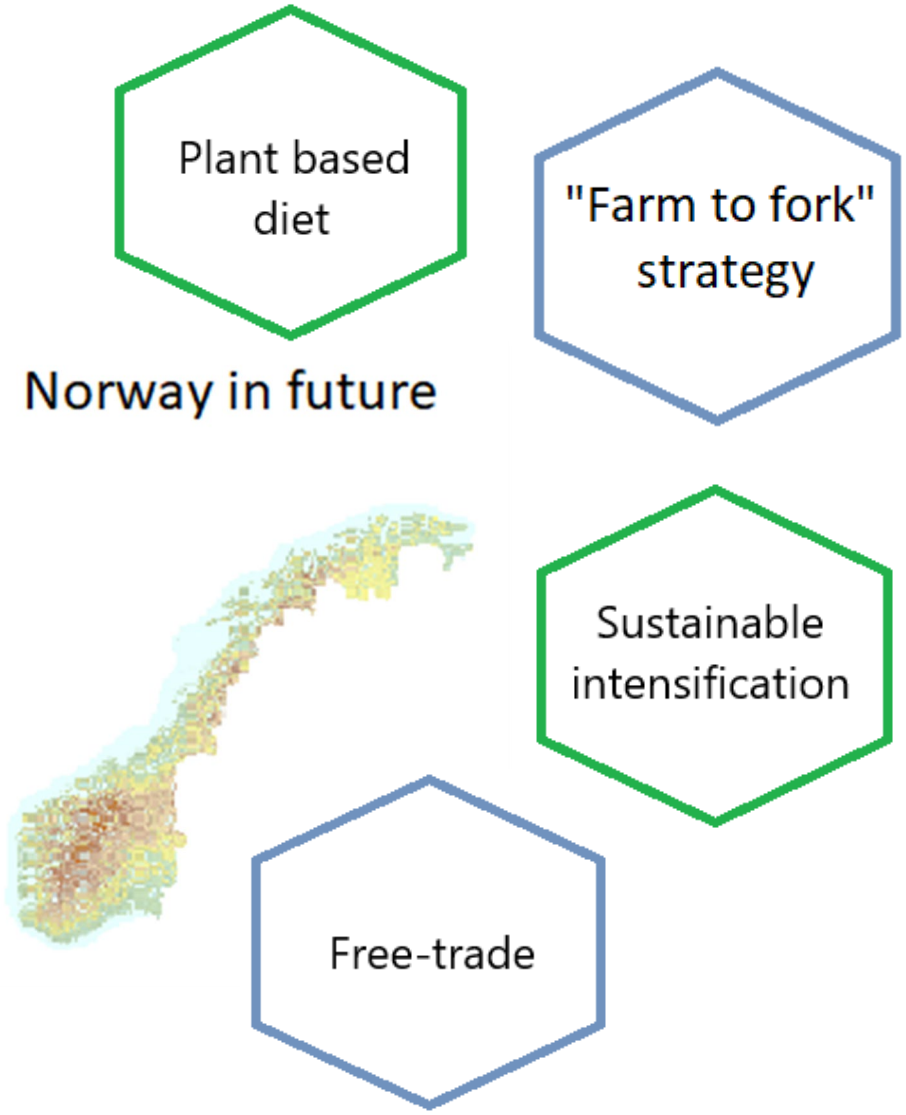


Further (remaining) work

- Identify and align existing models for other parts of the agri-food system
- Develop scenarios based on the narratives for the agricultural system



We have had a good start, hopefully we will manage to fulfil the promissed deliveries☺

Acknowledgment

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www.forskningsradet.no/en

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Thank you!

Questions?

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