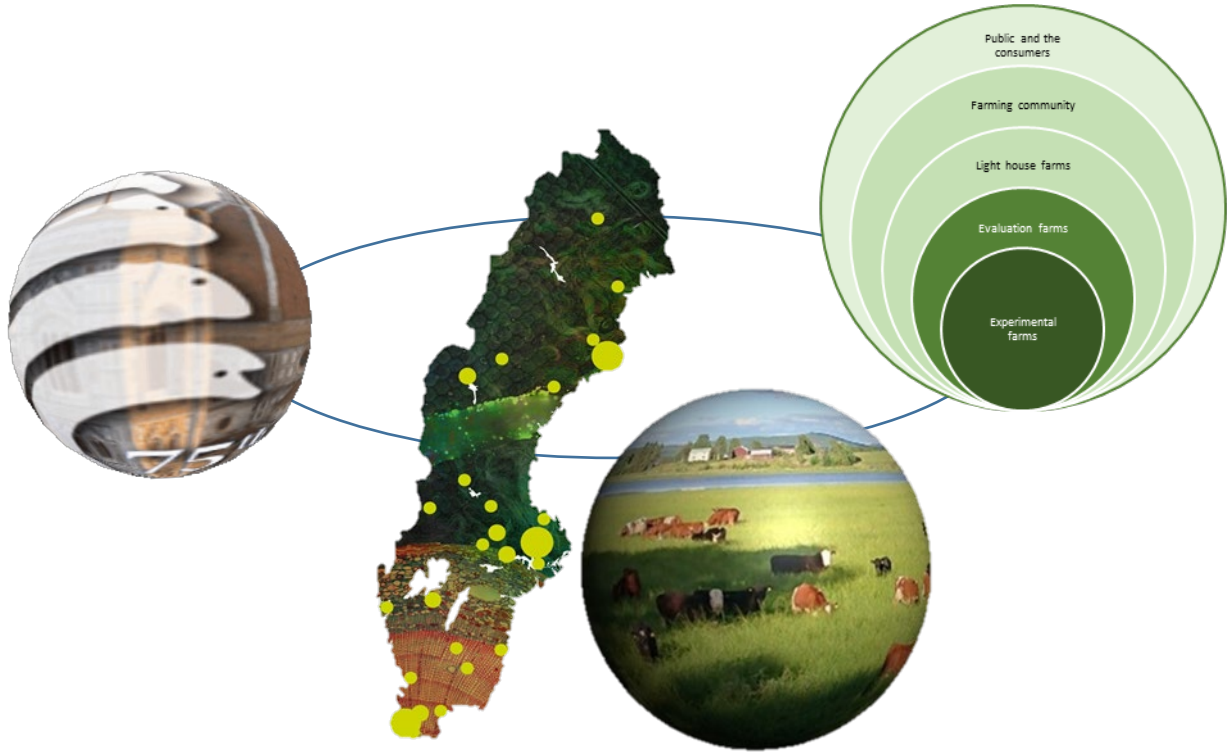

A grazing living lab in Northern Sweden, a case study

Mårten Hetta[1] , Juana Chagas[1] & Hanna Lindgren[2]

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Grazing Living Labs (GLL)

SustAinimal

Node West

Node North

Node South

sustainability

Article

The Defining Characteristics of Agroecosystem Living Labs

MDPI

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check for updates

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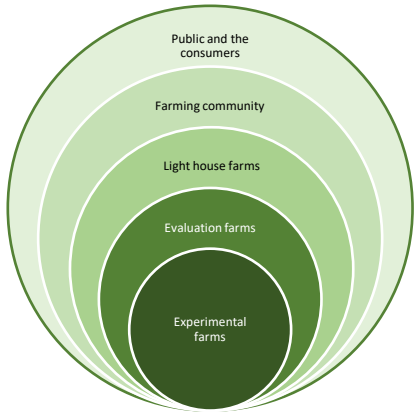
Abstract: In response to environmental, economic, and social challenges, the living labs approach to innovation is receiving increasing attention within the agricultural sector. In this paper, we propose a set of defining characteristics for an emerging type of living lab intended to increase the sustainability and resilience of agriculture and agri-food systems: the "agroecosystem living lab". Drawing on first-hand knowledge of case studies of large initiatives from Canada and France and supported by eight other cases from the literature, we highlight the unique nature of agroecosystem living labs and their distinct challenges with respect to their aims, activities, participants, and context. In particular, these living labs are characterized by exceptionally high levels of scientific research; long innovation cycles with high uncertainty due to external factors; and the high number and diversity of stakeholders involved. Both procedurally and conceptually, we link to earlier efforts undertaken by researchers seeking to identify urban living labs and rural living labs as distinct, new types of living labs. By highlighting what makes agroecosystem living labs unique and their communalities with other types of living labs, we hope to encourage their further study and help practitioners better understand their implementation and operational challenges and opportunities.

Keywords: living lab; agroecosystem; agriculture; innovation; characteristics; sustainability; typologies; placed-based



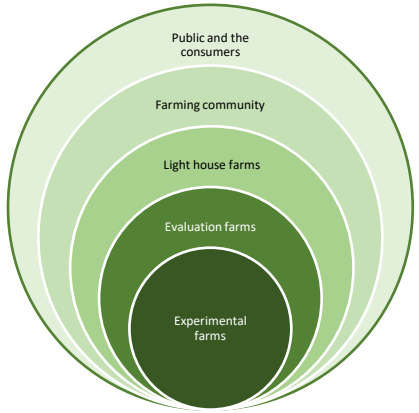
SustAinimal

The layers of the grazing onion

1. Public and the consumers / (Regional, Press and Enquiries)
2. Farming community (Members of cooperatives e.g. Norrmejerier)
3. Light house farms (Grazing excellence)
4. Evaluation farms (Producers who are open to changes)
5. Experimental farms (Controlled conditions with experimental designs)

Lower level of complexity, higher means of control and small surface area

Examples of on-going activities at different level of the onion



Meeting the public through the press

Public & the consumers


Uppdraget för att rädda Pommac blev riksnyhet

Västerbottens-Kurir

KONSUMENT

Här är bästa elcykeln

Kritiken bör läsas av alla på våra myndigheter

Kockarna från Bjurholm satsar på rök

Kornas påverkan på miljön mäts i studie

VÄRLDSUNIKT FORSKNINGSPROJEKT. Drygt 100 kossor i Umeå ingår i ett världsunikt forskningsprojekt mellan SLU i Umeå och Uppsala och norska NIBIO, där djurens utsläpp av metangas när de idisslar mäts, både när korna vistas inomhus och på grönbete. Projektet ska visa hur mycket metan en svensk ko ger ifrån sig.

The press react on the outcomes from the 2021, May-June IPCC Climate Change Sessions vs Reality

ACTA AGRICULTURAE SCANDINAVICA, SECTION B — SOIL & PLANT SCIENCE
2024, VOL. 74, NO. 1, 1–6
https://doi.org/10.1080/09064710.2024.2304757

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SustAinimal Grazing Living Lab – a survey of grazing management on dairy farms in northern Sweden

Anna-Karin Karlsson[a], Sophie Julie Krizsan[b,c] and Nilla Nilsdotter-Linde[d]

[a]Department of Agriculture and Food, RISE Research Institutes of Sweden, Umeå, Sweden; [b]Department of Animal Nutrition and Management, Swedish University of Agricultural Sciences, Uppsala, Sweden; [c]Department of Agricultural Sciences, Campus Blæstad, Inland Norway University of Applied Sciences, Hamar, Norway; [d]Department of Crop Production Ecology, Swedish University of Agricultural Sciences, Uppsala, Sweden

The farming community

- 302 Swedish dairy farms (response rate 98%) to identify grazing and grassland management strategies and the main challenges to grazing in northern Sweden.
- The most common grazing strategy on all dairy farms was continuous grazing (59%), followed by rotational grazing (45%).
- Organic dairy farms preferentially adopted rotational grazing (69%).
- The main challenges reported in grazing dairy cows on temporary grasslands on conventional farms were trampling damage and seasonal variations in grass growth.
- Only a few farms had grazing on semi-natural grasslands.
- Future sustainable grazing should focus on optimising grazing strategy and nutrient supply for high-yielding dairy cows.

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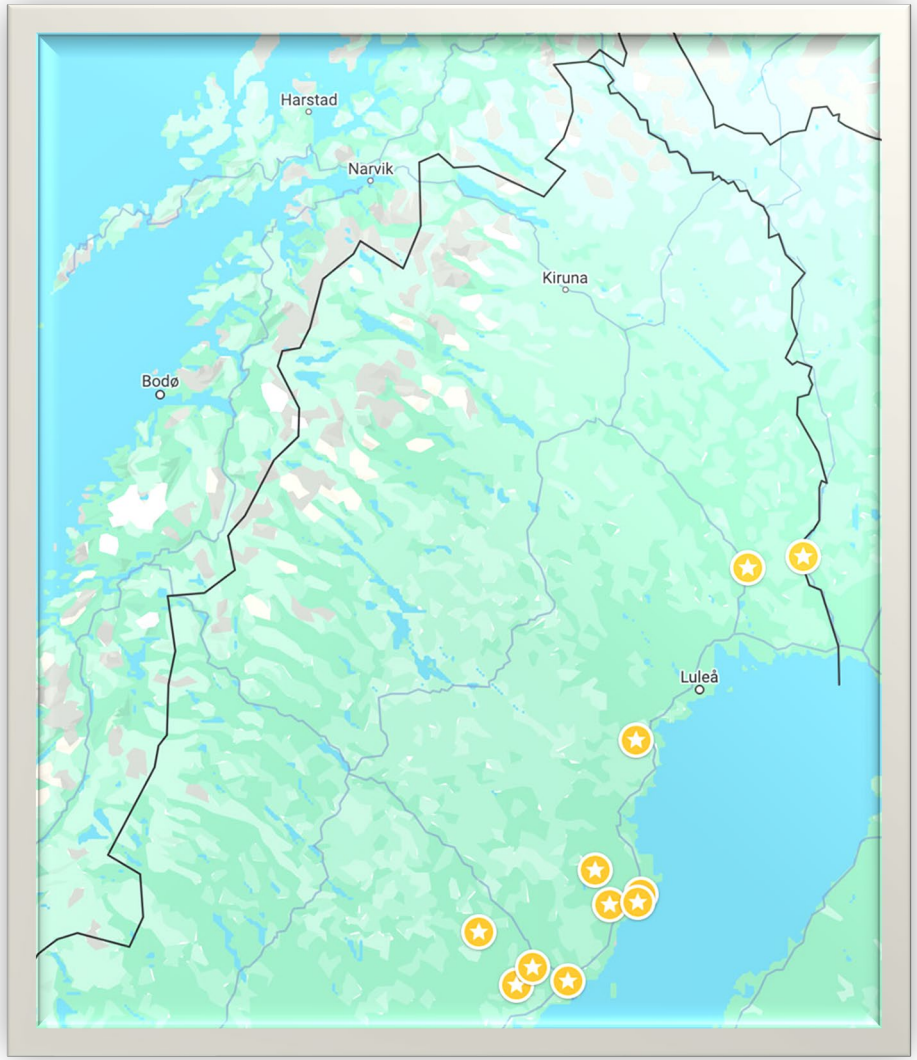
We have 12 lighthouse farms in two counties- connected to the project!

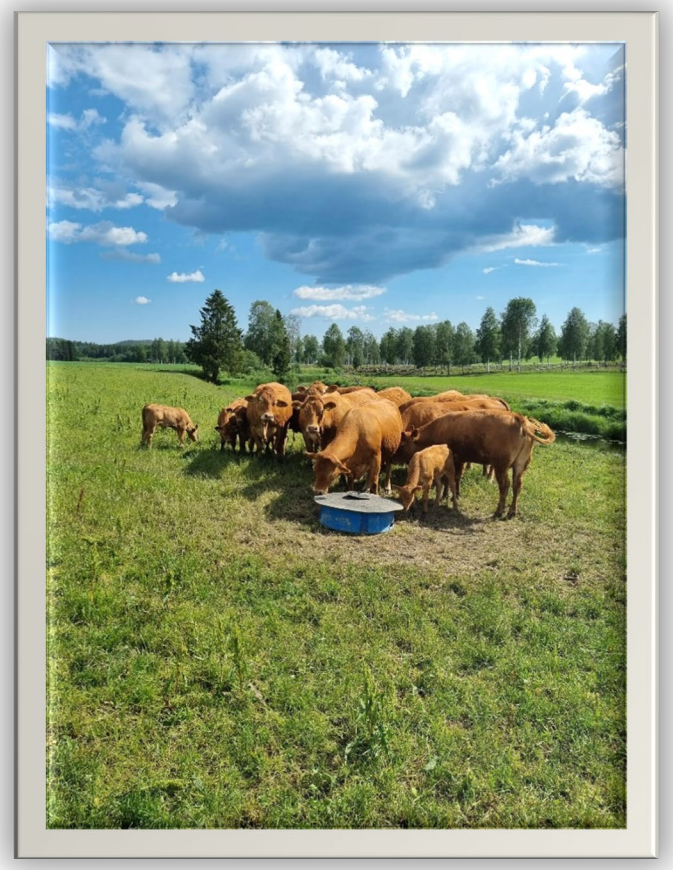
Grazing Living Lab – Nod norr | Externwebben (slu.se)

1) Dairy and beef
2) Dairy
3) Sheep and lamb
4) Dairy
5) Beef
6) Lamb and beef
7) Dairy and beef
8) Lamb and beef
9) Lamb
10) Dairy
11) Beef
12) Dairy, beef & sheep

Lighthouse farms

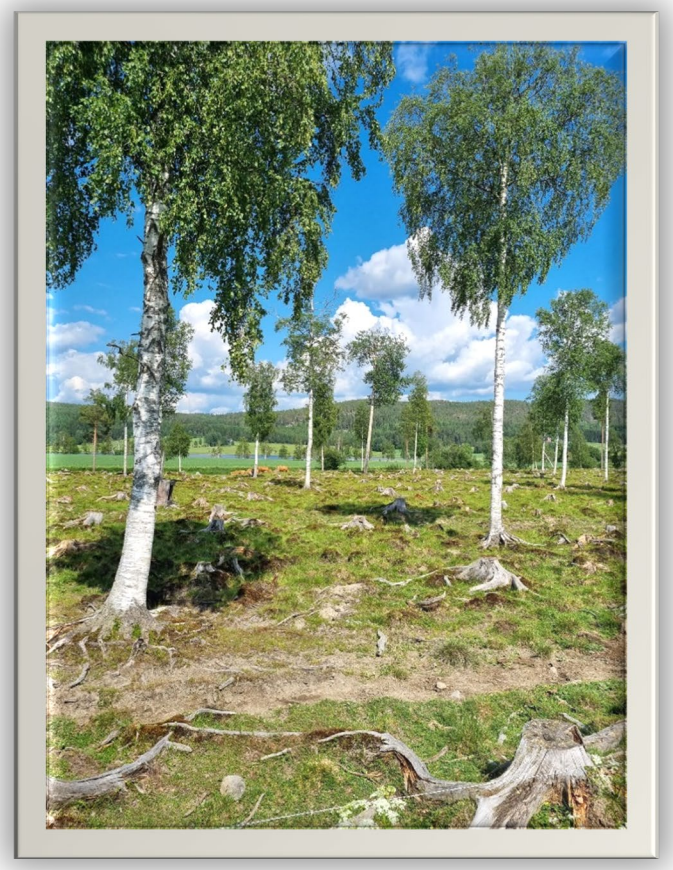


Grazing in temporary grasslands
(Leys in the crop rotation)



Case A Intensive

Grazing in semi-natural grasslands
(Part of the trees removed)

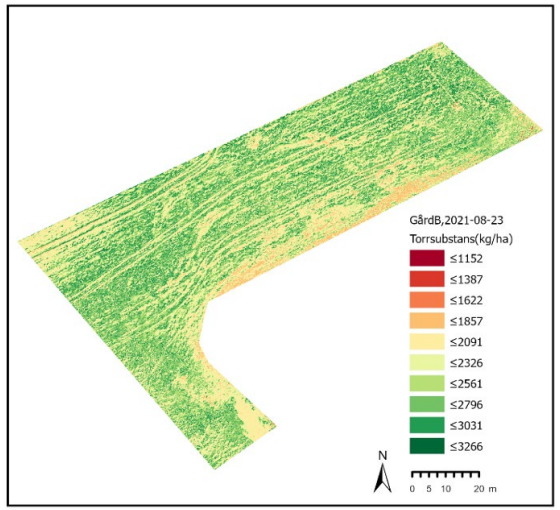


Case B Exetensive

SustAinimal

Grazing study in Norrland – Evaluation grazing fields for dairy cattle

Evaluation farms



"Grazing field for dairy cows in practice – data from seven dairy farms in Norrland"

Stiftelsen Lantbruksforskning

SLU VÄXA

SustAinimal Länsstyrelsen Västerbotten

Regional jordbruksforskning för norra Sverige

Bete och biologisk mångfald

Vallkonferens 2023

Multispectral drone imagery for pasture assessment

J. Morel[1,2], J. Oliveira[1], S. Bergqvist[1], J. Chagas[1], M. Ramin[3] och G. Bernes[3]
[1]Sveriges lantbruksuniversitet (SLU), Institutionen för växtproduktionsekologi, Umeå
[2]European Commission, Joint Research Center, Ispra, Italien [3]SLU, Institutionen för husdjurens utfodring och vård, Umeå
Corresponding author: julien.morel@ec.europa.eu

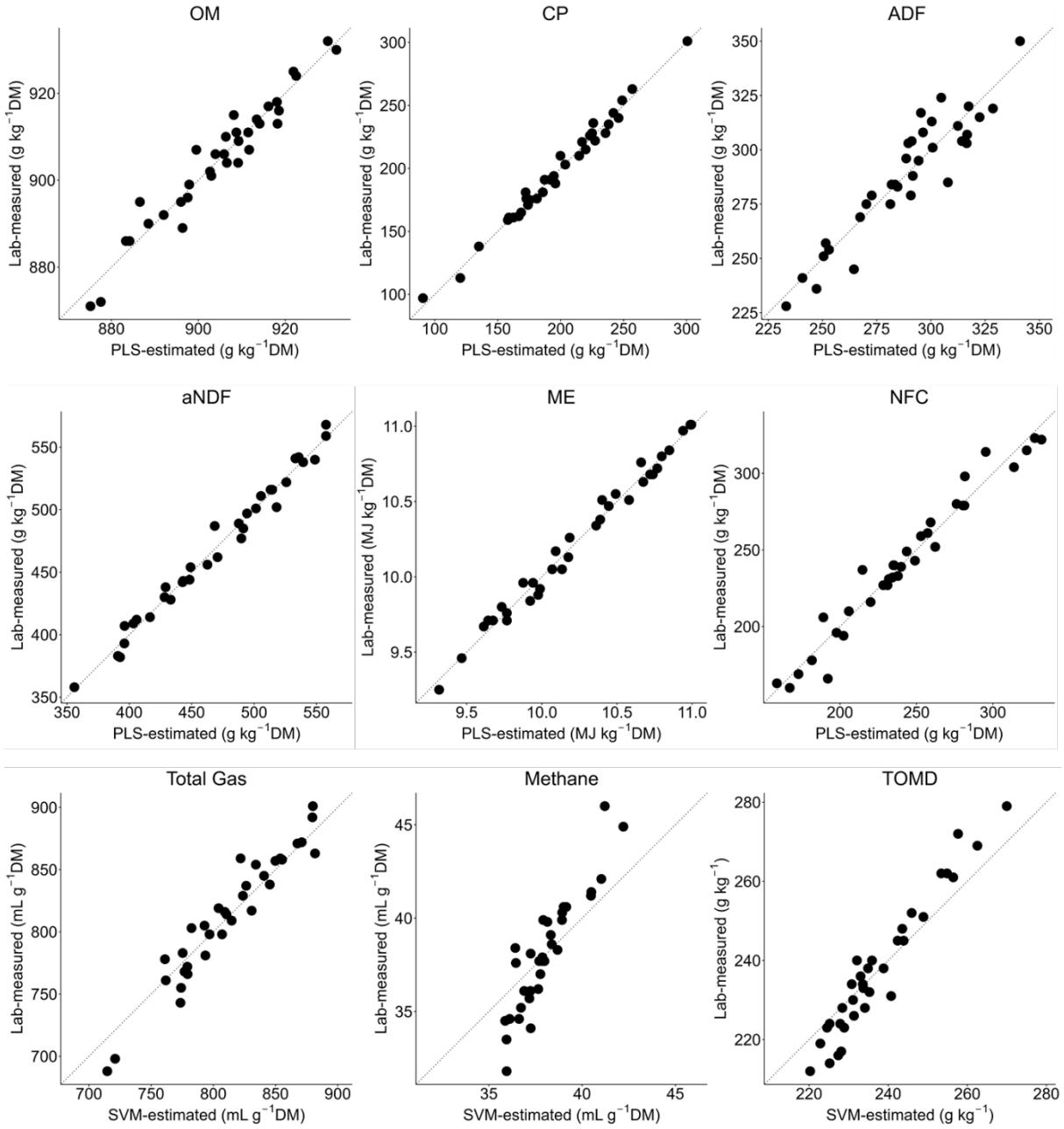
Spectroscopy for assessing the nutritional value of pastures and enteric methane emissions from dairy cows in northern Sweden

Oliveira J.[1], Chagas J.C.C.[2], Bernes G.[2], Fant P.[2], Angeard E.[3], Morel J.[4] and Ramin M.[2]

Evaluation farms

The Netherlands 9-13 June EGF 2024

Potential future predictions for CO2 eq models…



ACTA AGRICULTURAE SCANDINAVICA, SECTION A — ANIMAL SCIENCE
https://doi.org/10.1080/09064702.2023.2249907

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Effects of daytime or night-time grazing on animal performance, diurnal behaviour and enteric methane emissions from dairy cows at high latitudes

Quentin Lardy [a,b], Mohammad Ramin [b], Vibeke Lind [a], Grete Jørgensen [a], Mats Höglind [a], Emma Ternman [c] and Mårten Hetta [b]

[a]Department of Grassland and Livestock, Norwegian Institute of Bioeconomy Research, NIBIO, Ås, Norway; [b]Department of Animal Nutrition and Management, Swedish University of Agricultural Sciences, SLU, Umeå, Sweden; [c]Faculty of Biosciences and Aquaculture, Nord University, Steinkjer, Norway

Experimental farm

New possibilities with virtual fences for grazing in northern Sweden - Evaluation of local conditions concerning animals, technology and vegetation

Juana Chagas[1], Mårten Hetta[1] Julianne Oliveira[2] & Keni Ren[3]

Experimental + evaluation farms

Department of Applied Physics and Electronics

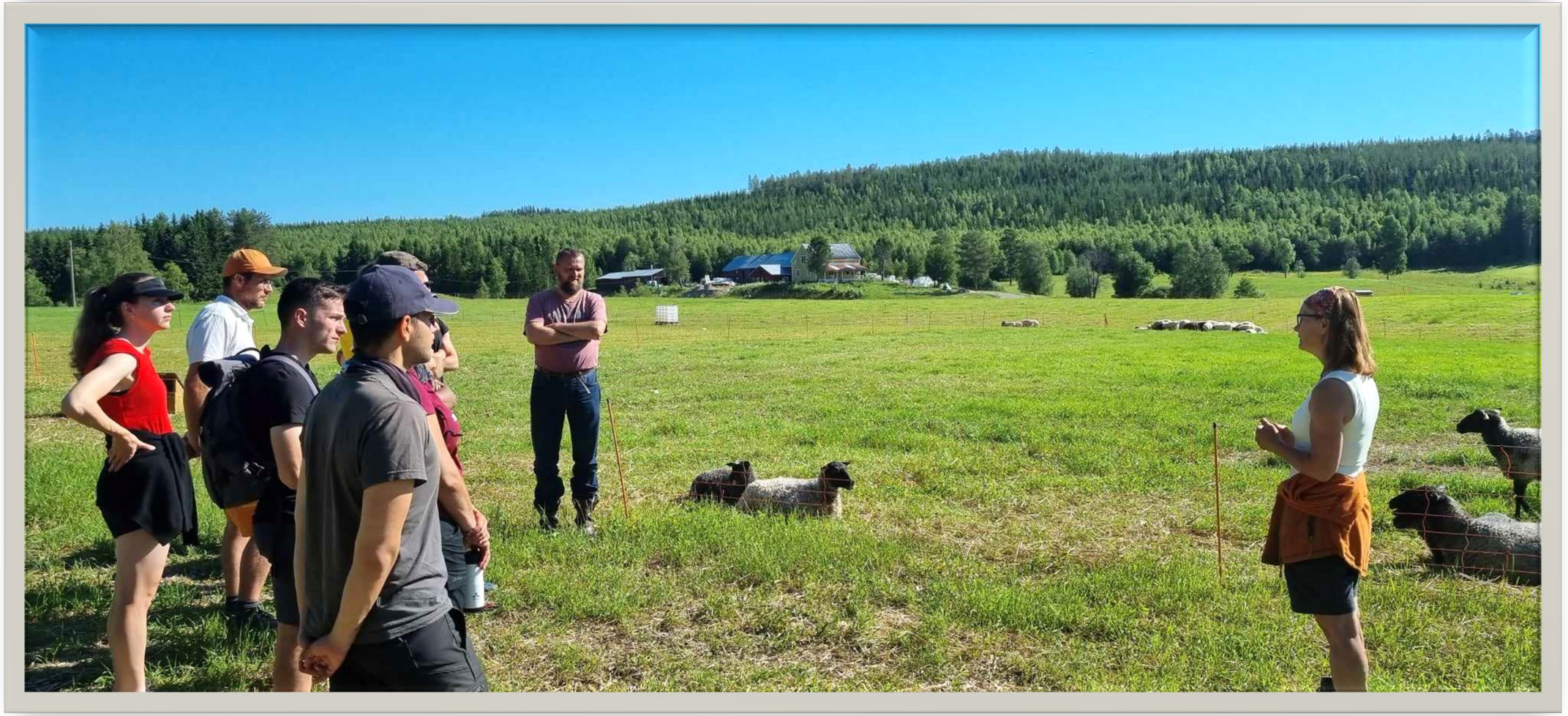
Department of Crop Production Ecology

Department of Applied Animal Science and Welfare

Grazing and herbivory with focus on domestic ruminants and semi wild herbivores, 3 ECTS

Ph D Course 2024

Experimental +
evaluation
farms+
Natural habitats



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RI.SE · Växa · Gård&Djurhälsan · naturbeteskött · Svenska Vallföreningen för bättre grovfoder

Thanks to co-authors!

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