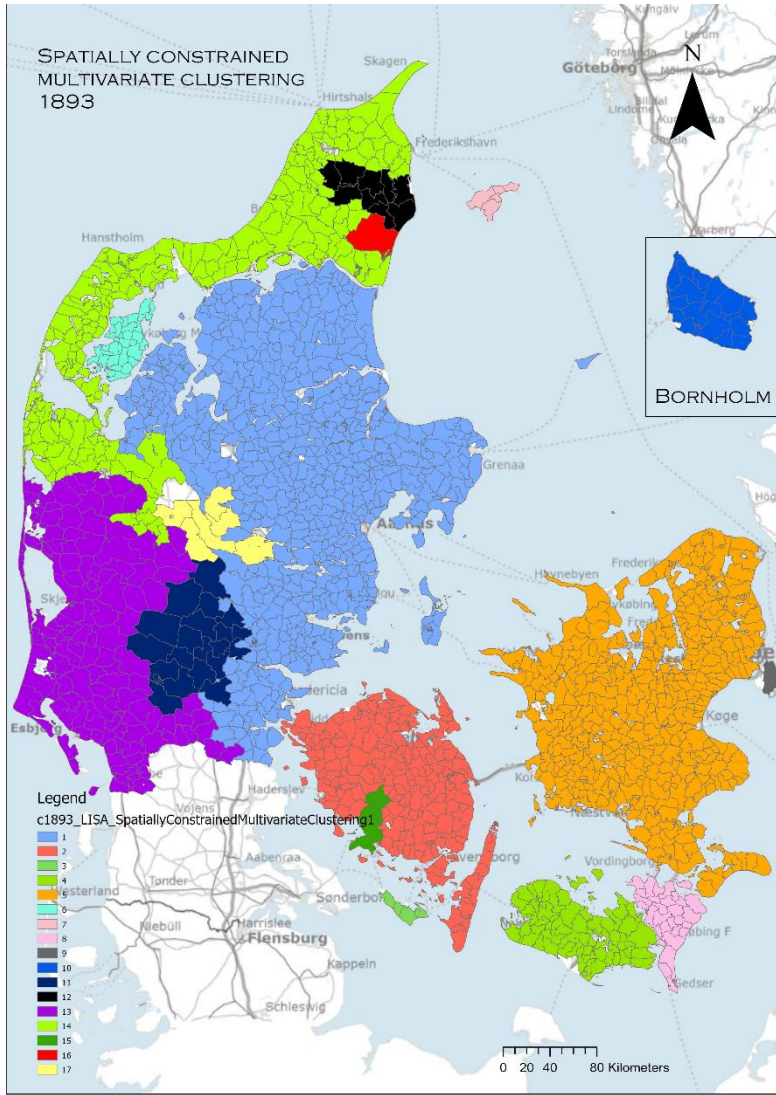
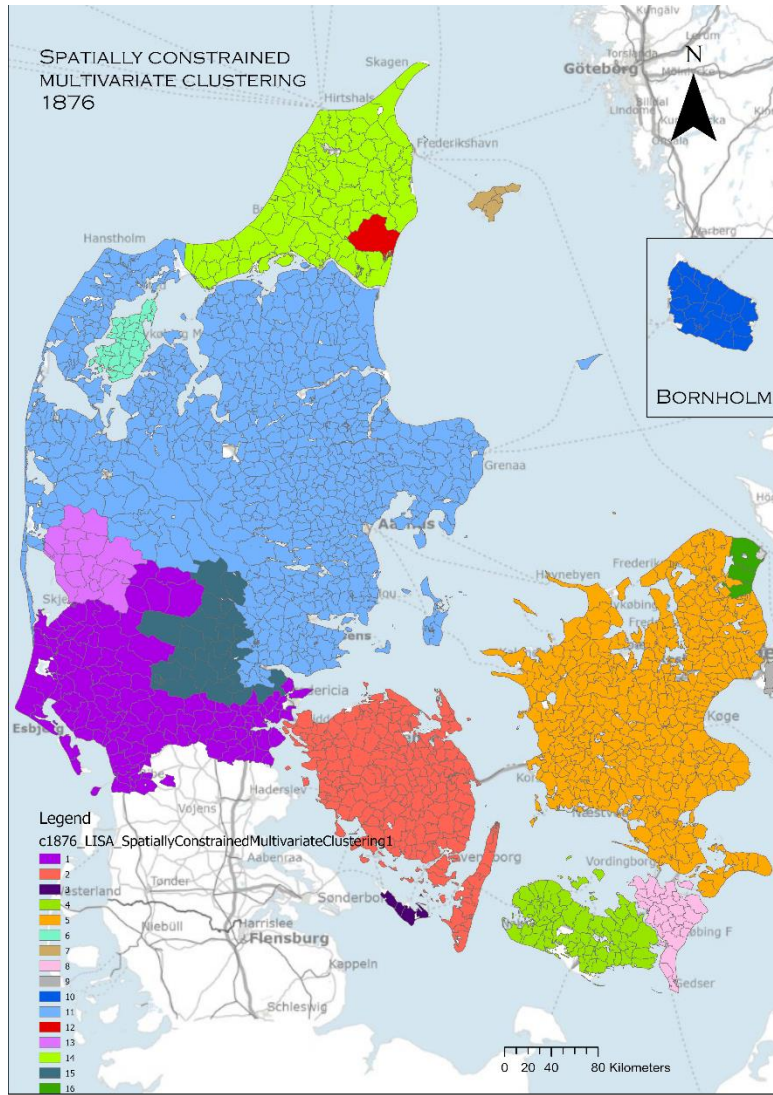
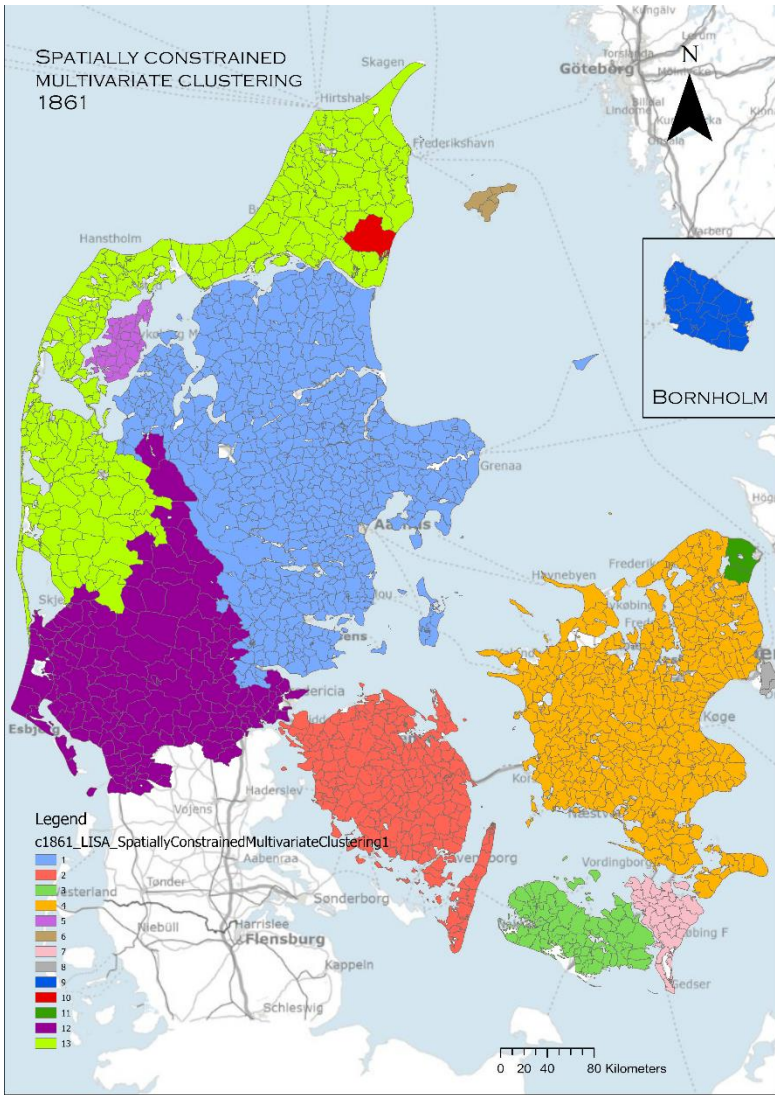


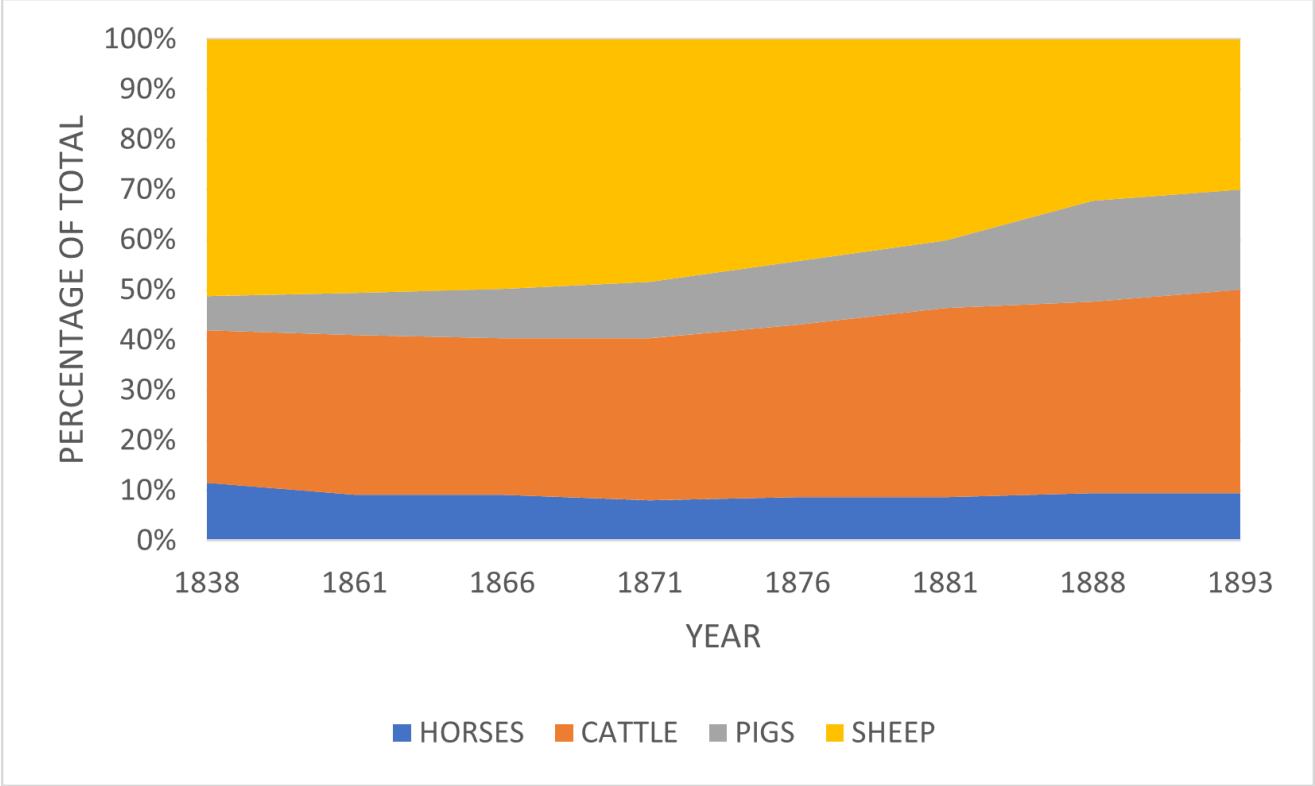
# STATISTICS AND MAPS OF DANISH AGRICULTURE IN THE 19<sup>TH</sup> CENTURY APPETIZERS ON HISTORICAL RESEARCH



# Spatially constrained multivariate cluster analysis 1861, 1876, 1893



# CHANGES IN LIVESTOCK



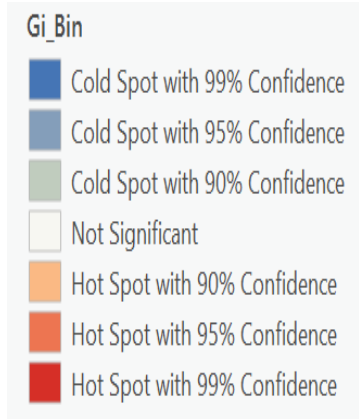
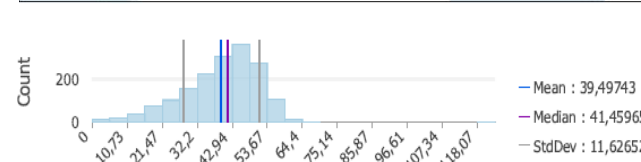
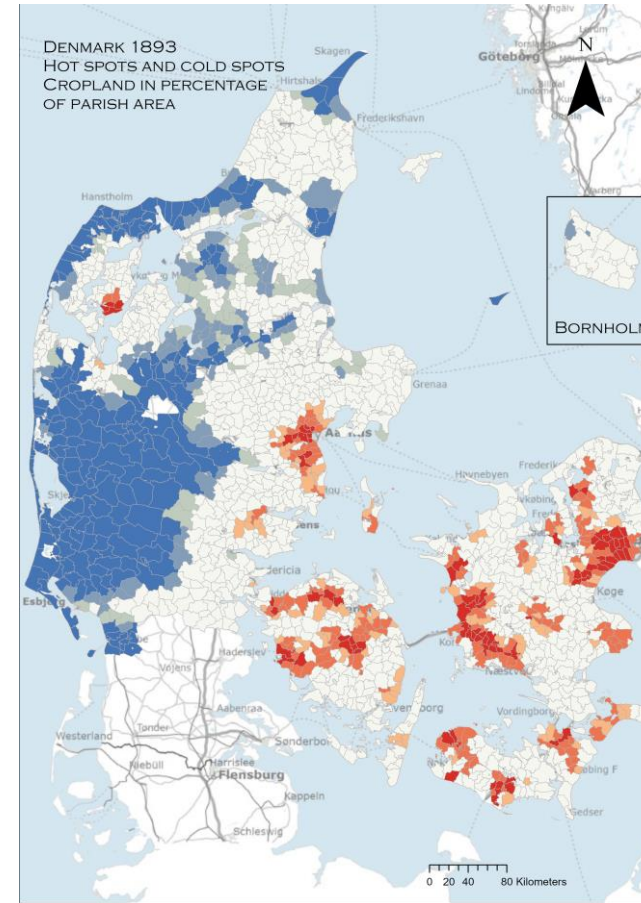
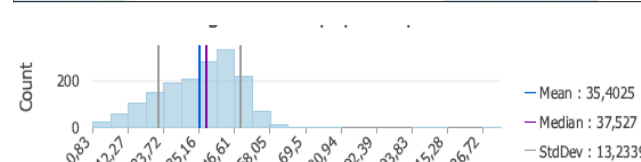
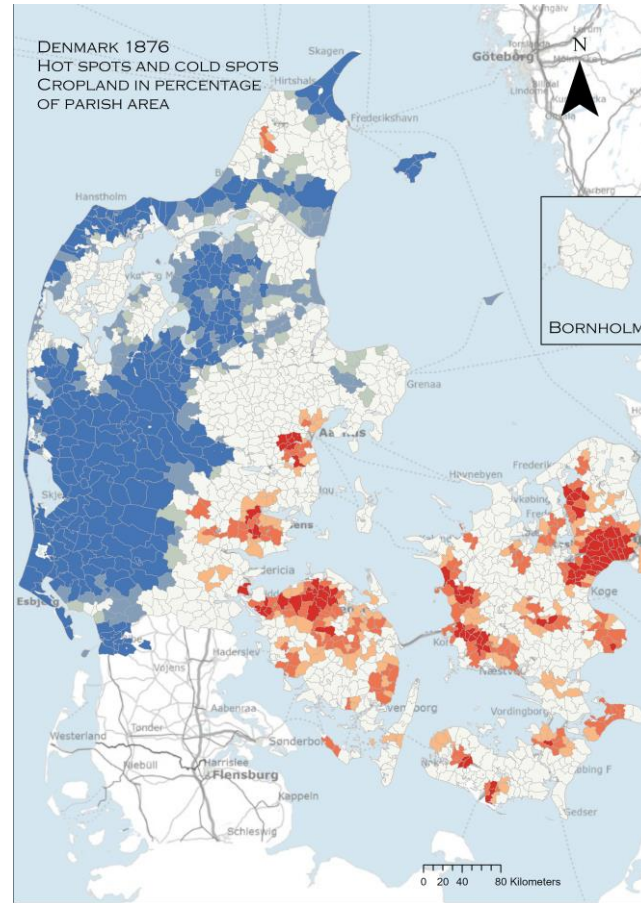
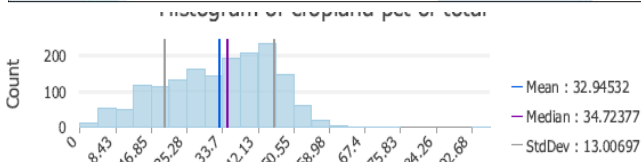
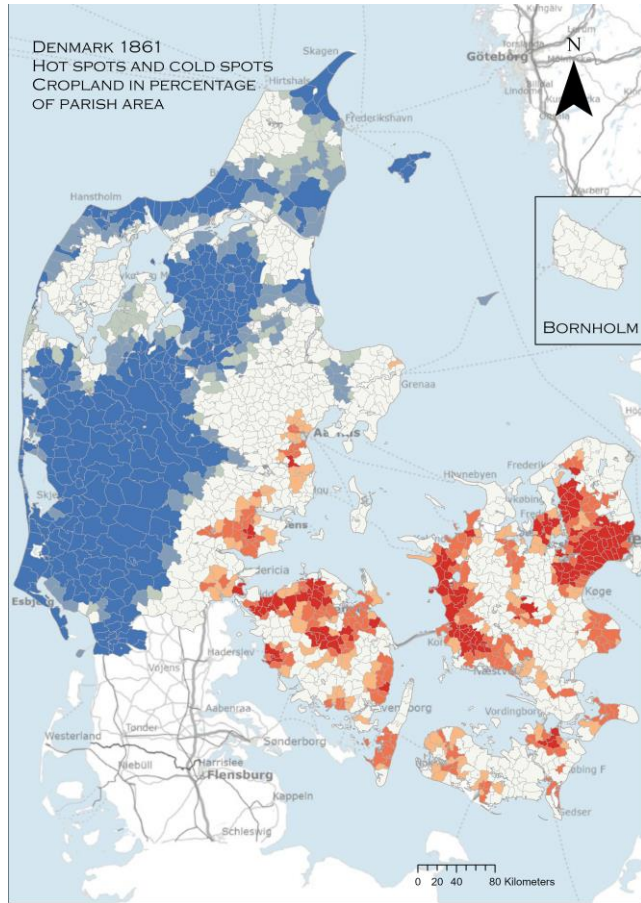
Livestock 1838-1893. Animals in percentage of total number: horses, cattle, pigs and sheep in comparison to the total number of livestock at national level.

Lohrum et al. (2024)





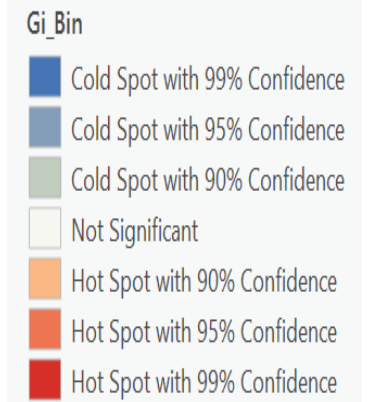
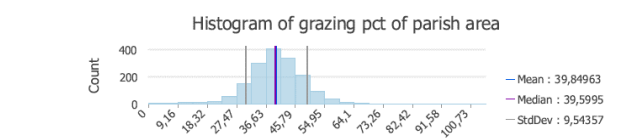
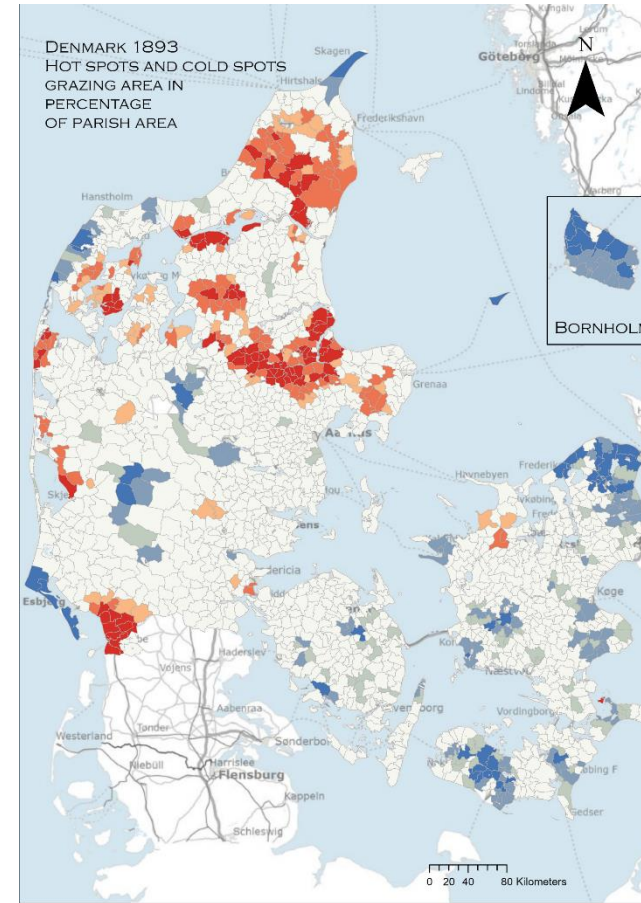
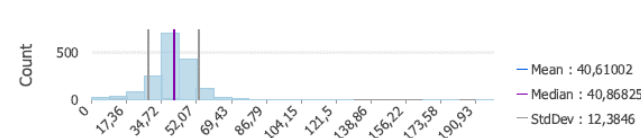
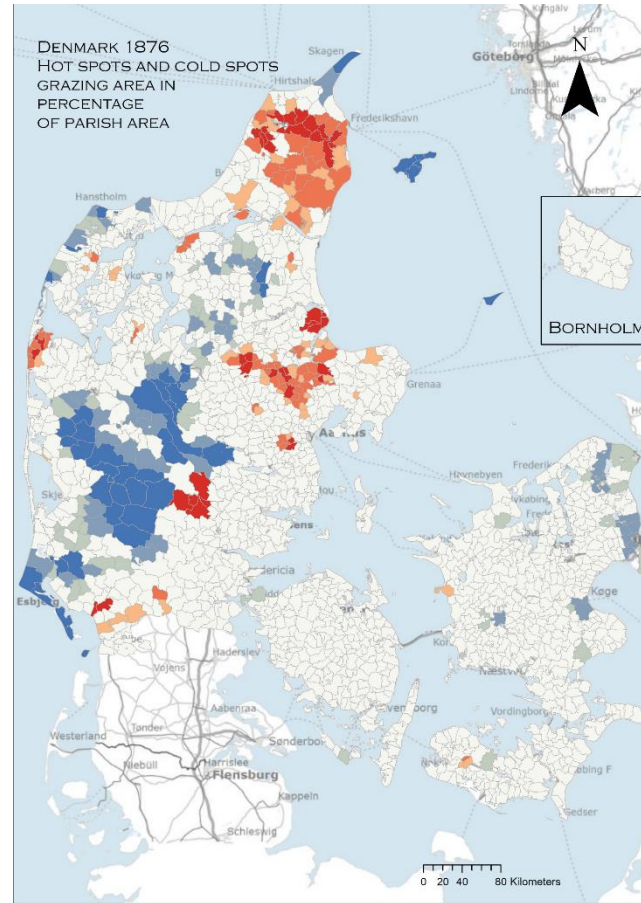
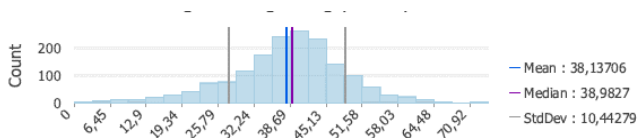
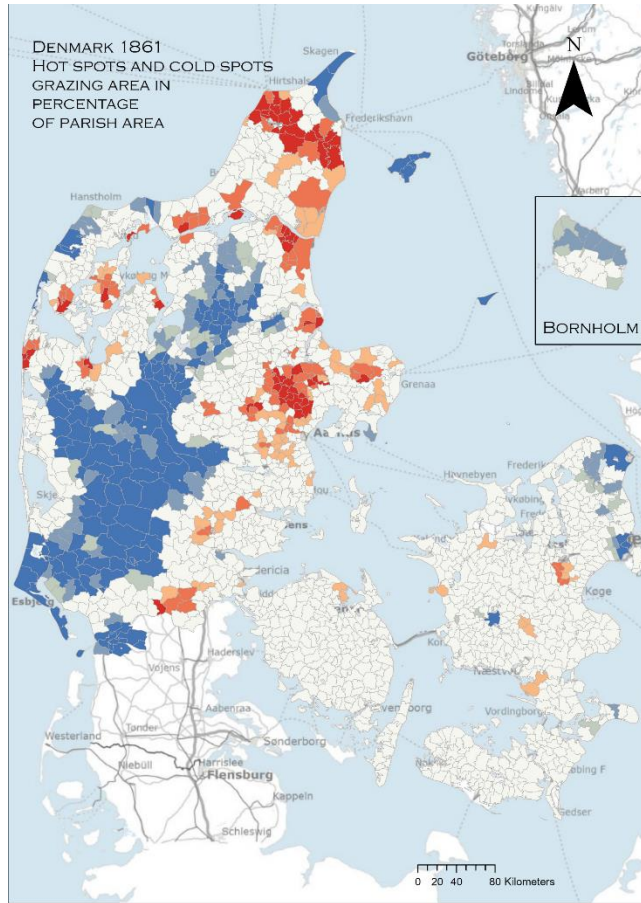
# HOT SPOTS – COLD SPOTS CROPLAND



Lohrum et al. (2024)

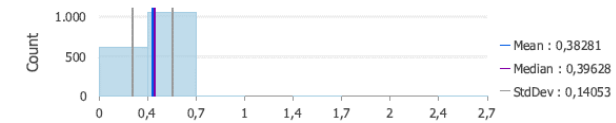
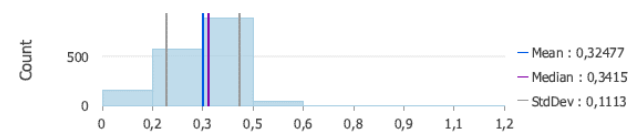
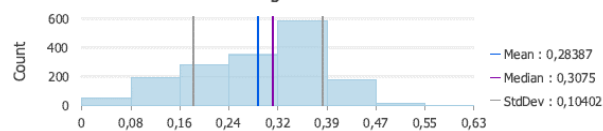
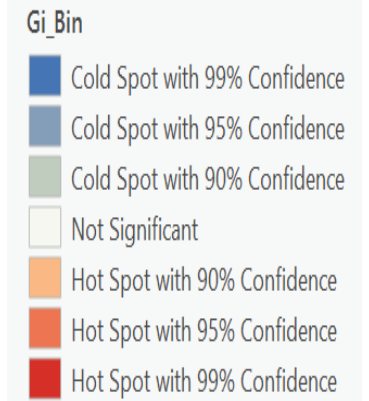
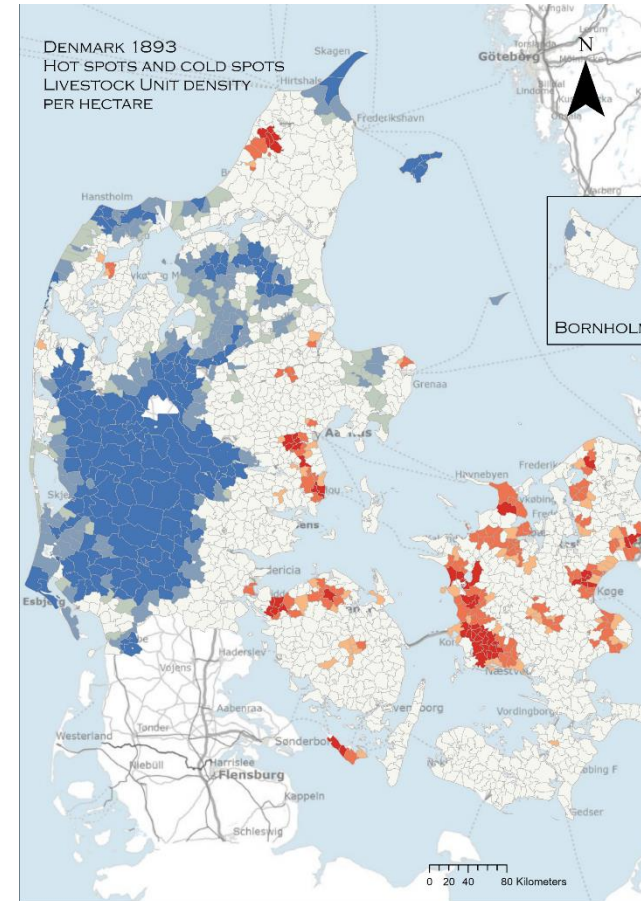
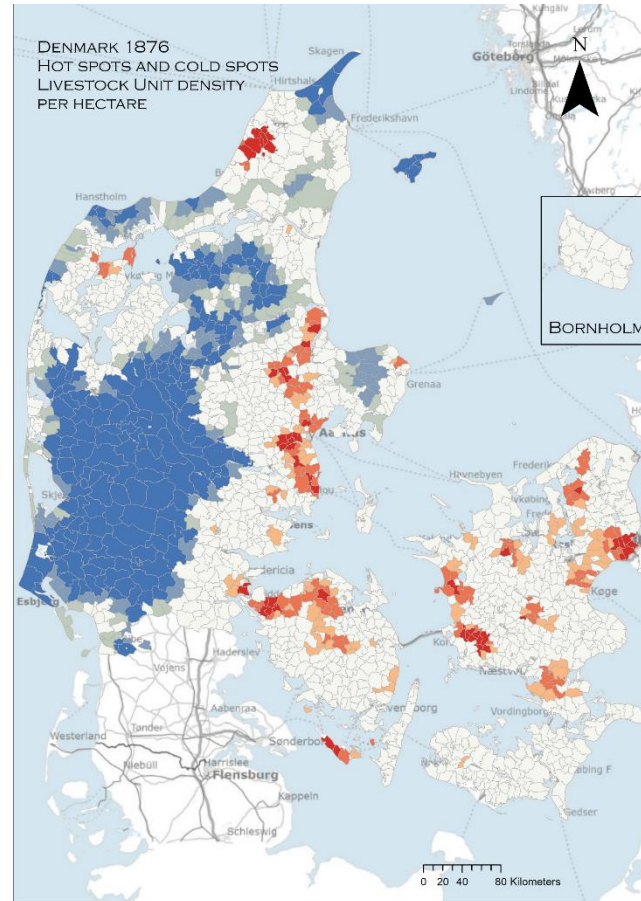
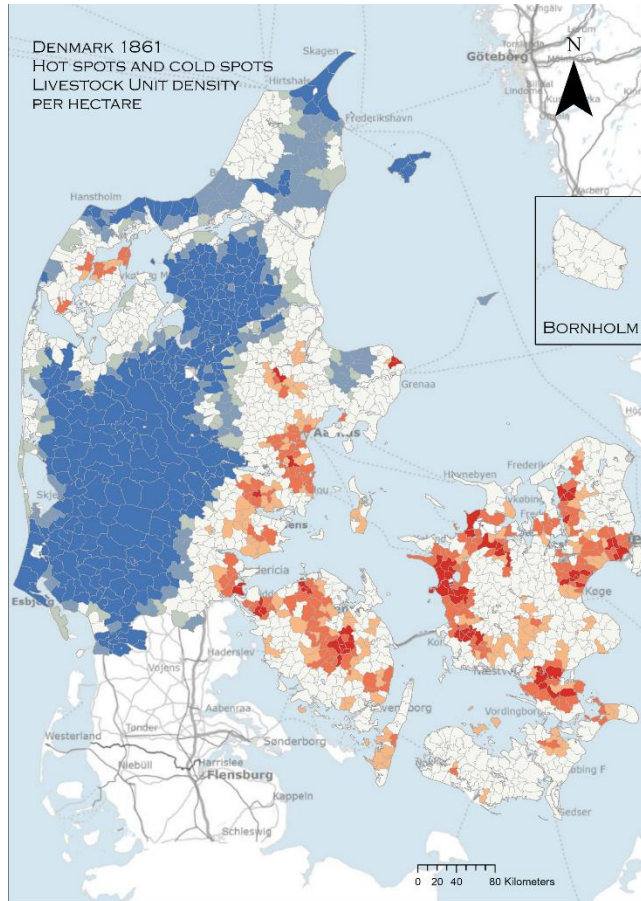


# HOT SPOTS - COLD SPOTS GRAZING AREA





# HOT SPOTS – COLD SPOTS LIVESTOCK DENSITY



Lohrum et al. (2024)

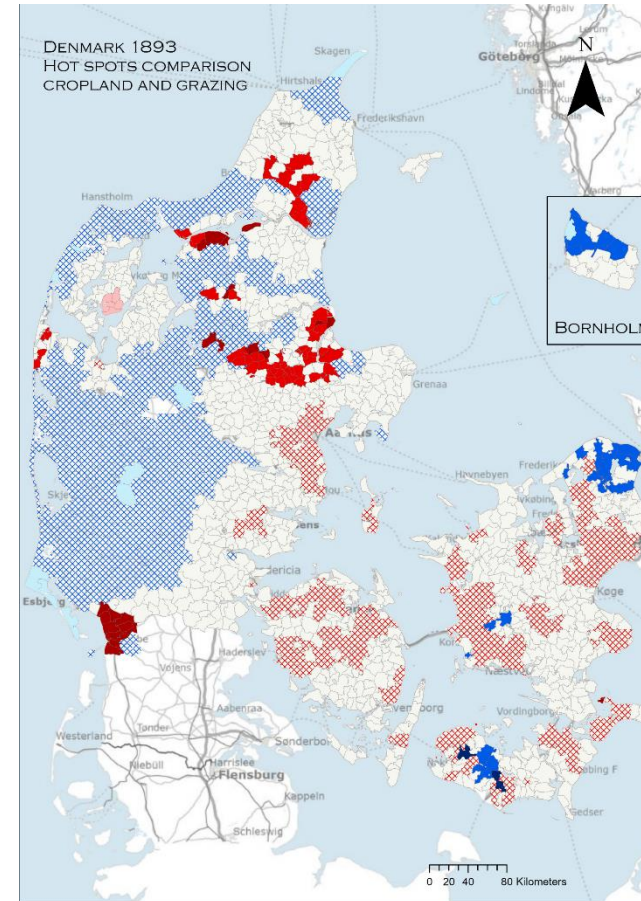
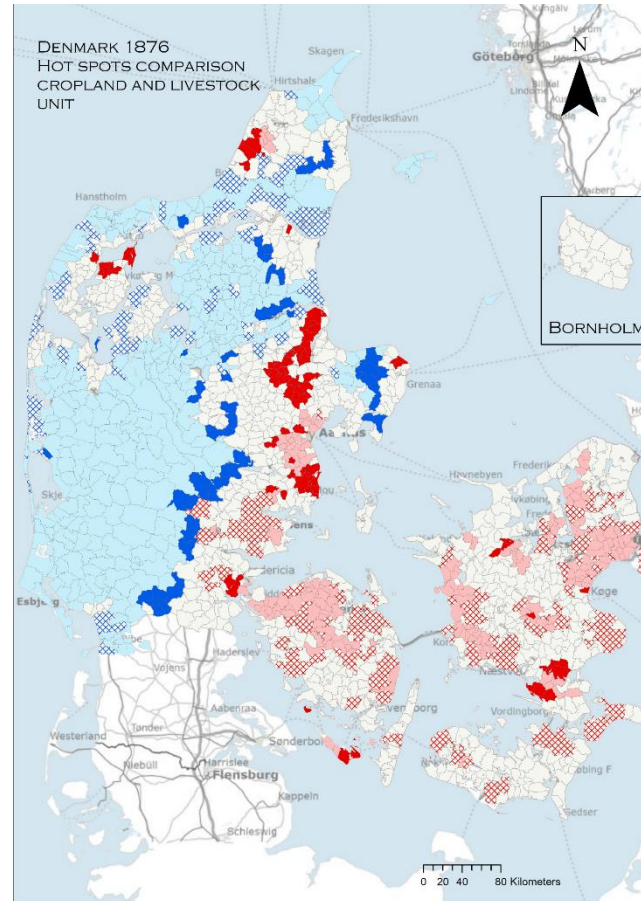
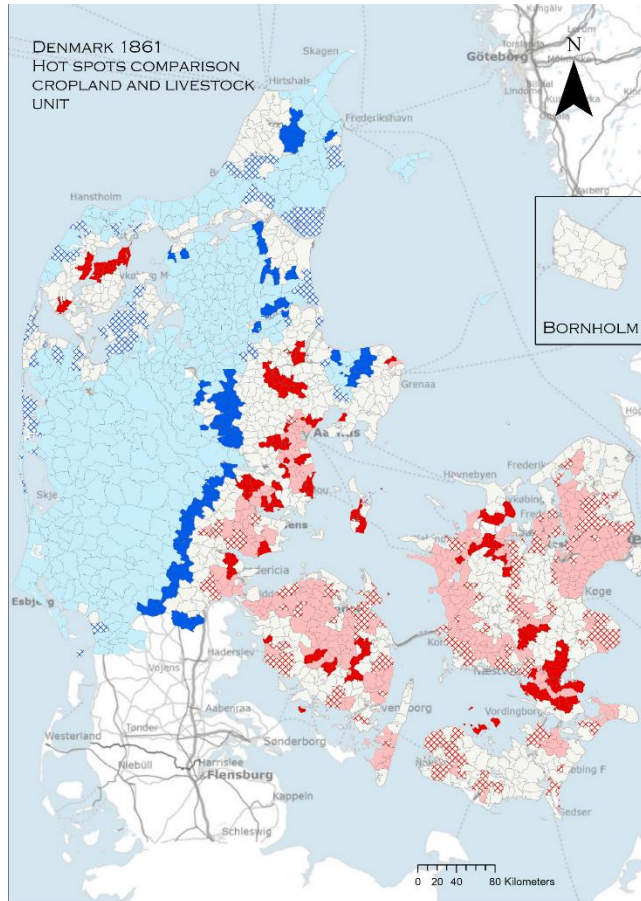
# SUMMARIZING STATISTICS...

Category	Description	1861		1876		1893		changes 1861 to 1876		changes 1876 to 1893	
		km <sup>2</sup>	pct of total area	km2	pct of total area	km2	pct of total area	km2	pct of total area	km2	pct of total area
cropland	Hot spots	4715	12,5	3704	9,7	3549	9,3	-1010	-2,8	-156	-0,4
	cold spots	14168	37,5	12914	33,9	10897	28,7	-1255	-3,6	-2017	-5,3
grazing	Hot spots	2859	7,6	2478	6,5	4028	10,6	-381	-1,1	1550	4,1
	cold spots	8400	22,3	4974	13,1	4001	10,5	-3426	-9,2	-973	-2,5
Livestock	Hot spots	3705	9,8	2211	5,8	2443	6,4	-1495	-4,0	233	0,6
	Cold spots	14169	37,5	11315	29,7	10646	28,0	-2854	-7,8	-669	-1,7

Lohrum et al. (2024)



# HOT SPOT COMPARISON: CROPLAND AND LIVESTOCK DENSITY



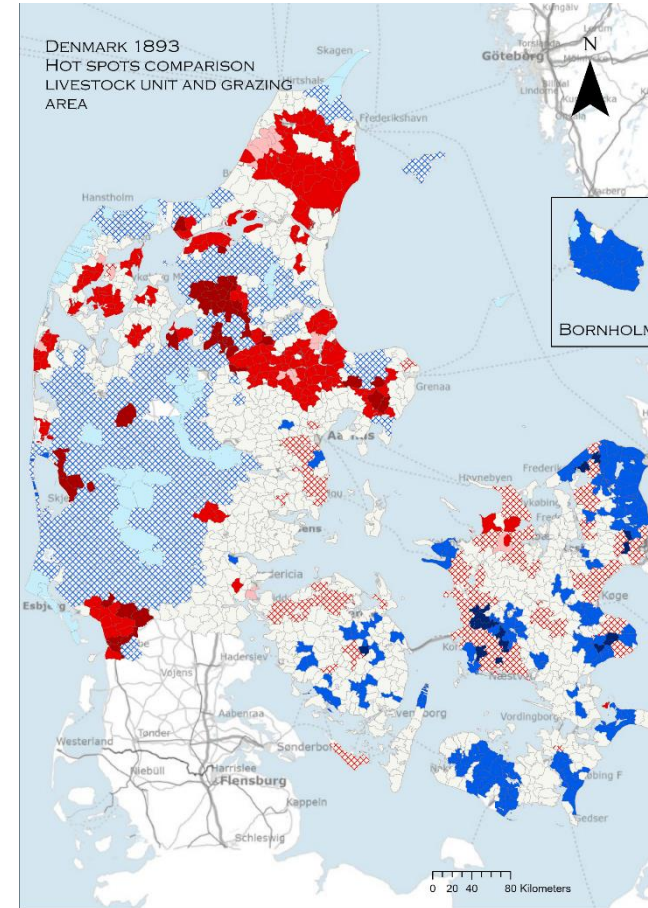
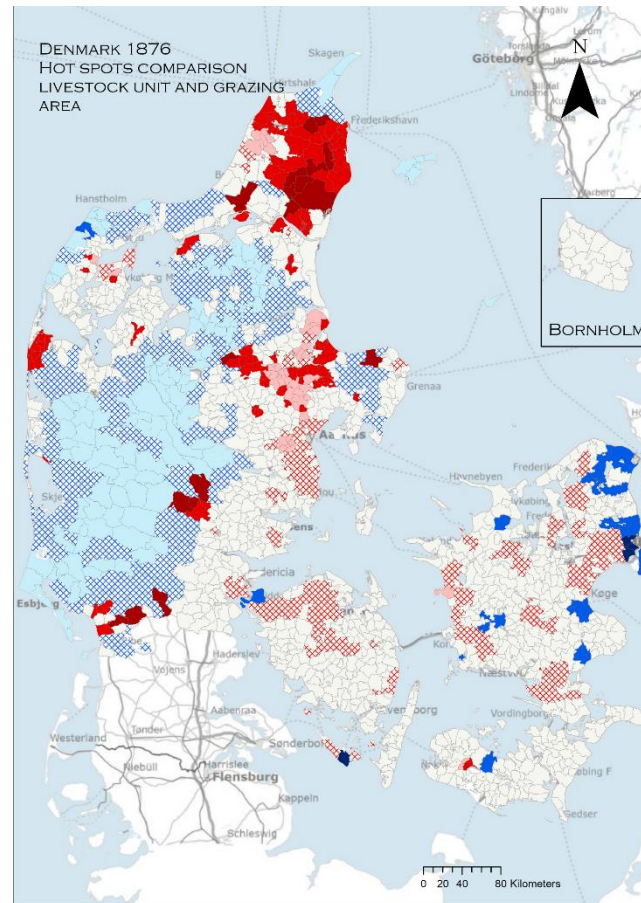
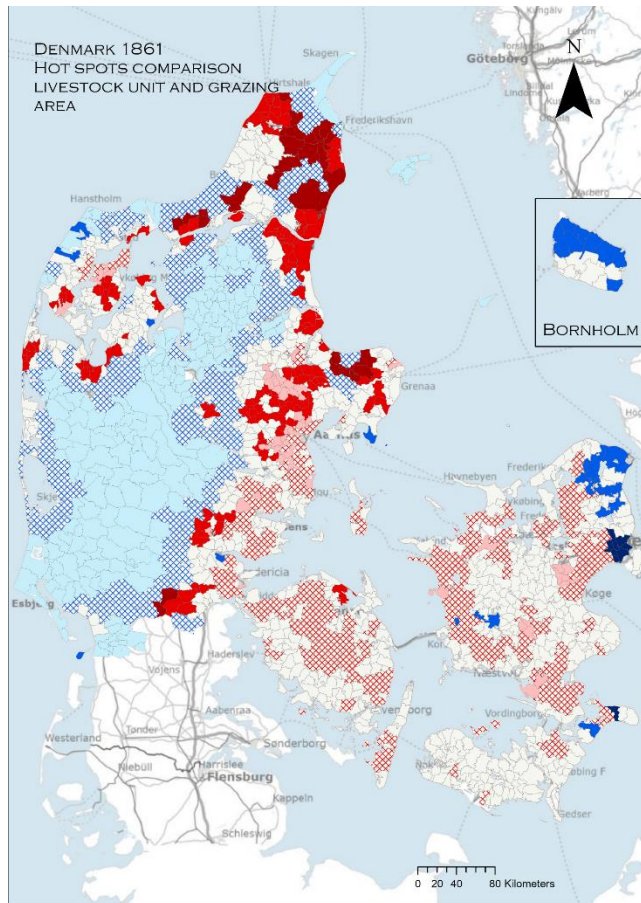
## Significance Level Combinations

- Cold to Hot
- Not Sig to Hot
- Hot to Hot
- Hot to Not Sig
- Not Sig to Not Sig
- Cold to Not Sig
- Cold to Cold
- Not Sig to Cold
- Hot to Cold

Lohrum et al. (2024)



# HOT SPOT COMPARISON: LIVESTOCK DENSITY AND GRAZING

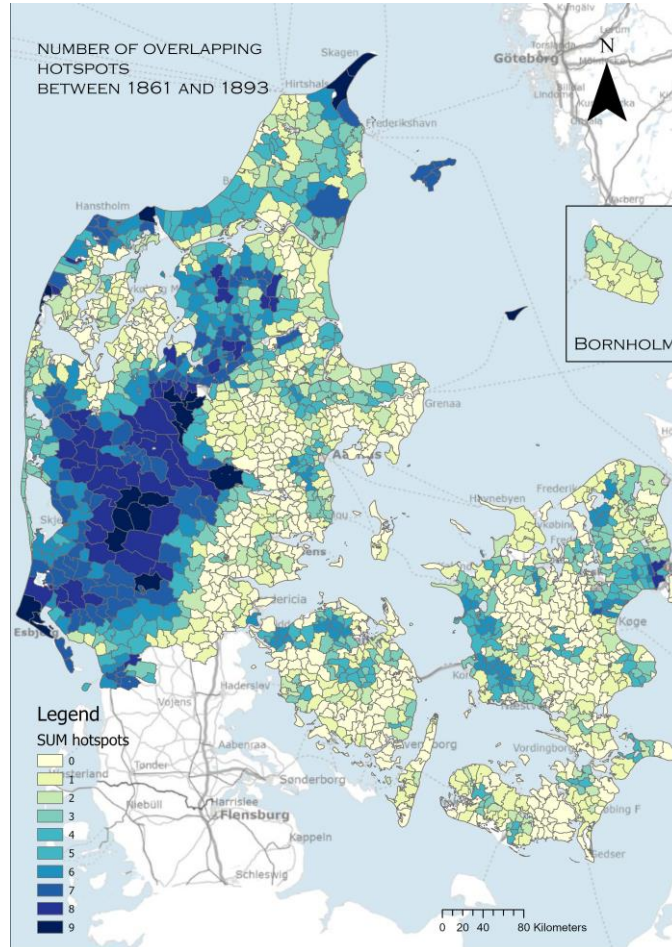


## Significance Level Combinations

- Cold to Hot
- Not Sig to Hot
- Hot to Hot
- Hot to Not Sig
- Not Sig to Not Sig
- Cold to Not Sig
- Cold to Cold
- Not Sig to Cold
- Hot to Cold

Lohrum et al. (2024)

# HOTSPOTS IN TOTAL AT PARISH LEVEL:

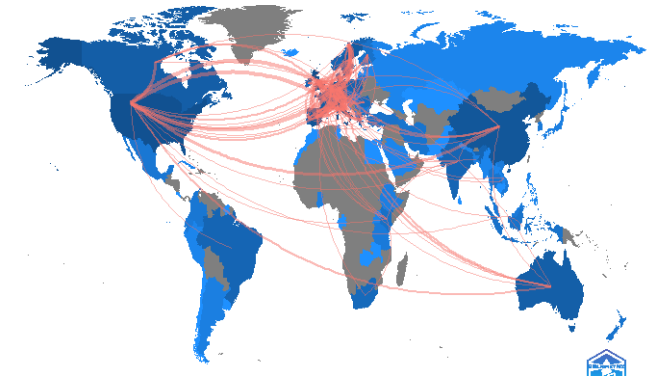
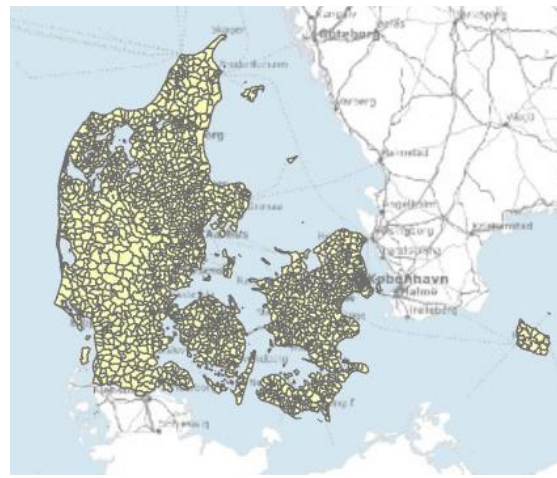


Ref.: Lohrum, N., Normand, S., Dalgaard, T., & Graversgaard, M. (2024). Unveiling the frontiers: Historical expansion and modern implications of agricultural land use in Denmark. *Journal of Environmental Management*, 359, 120934.

doi:<https://doi.org/10.1016/j.jenvman.2024.120934>



# SO WHAT?



## Temporal dimension

## Spatial dimension

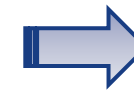
## International dimension



- Primary productivity
- Recycling biomass (harvested, unharvested)
- Land use change
- Circularity/non-circularity of agricultural systems



- Spatial dimensions of agricultural systems
- Drivers
- Socio-ecological aspects
- Structural changes



- Sustainable agricultural practices
- Upscaling to international level

Thank you for your attention!



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Questions?  
Feedback..

