Saying Hallo!

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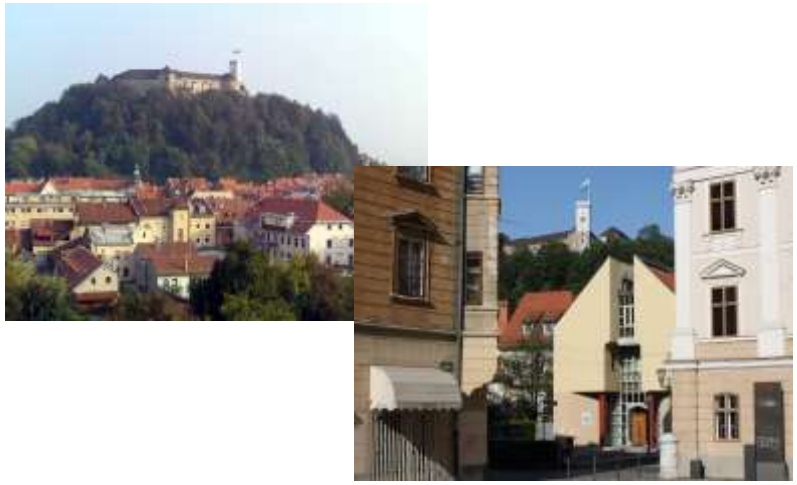
Land use heading towards regional differentiation: Case studies Czechia and Slovenia

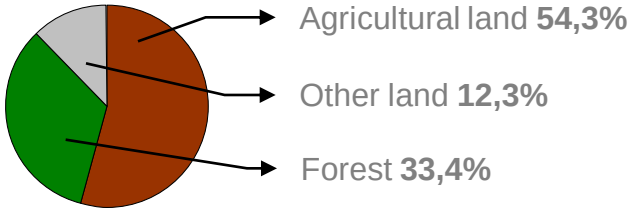


Part of the research projects
1) Grant Agency of the Czech Republic no. 205/09/0995 „Regional differentiation and possible risks of land use as a reflection of functional changes of landscape in Czechia 1990-2010“.
2) Slovenia: Research programme „Geography of Slovenia“

Czechia /Prague

78.866 km^2; 10.251.079 inhabitants; 130 inh./km^2

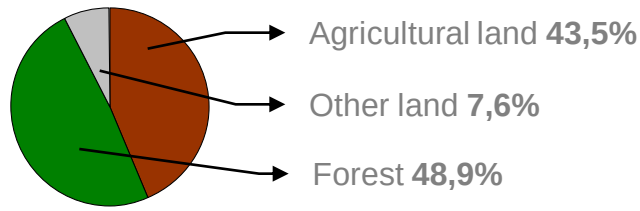
115-1.602 meters asl.; inland country



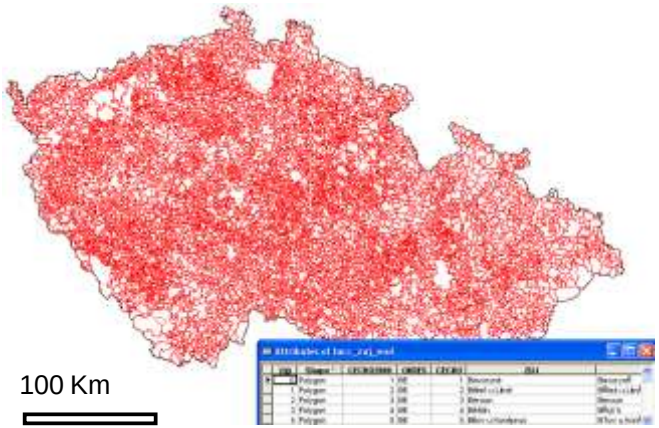
Slovenia /Ljubljana

20.273 km^2; 2.010.377 inhabitants; 99 inh./km^2

0-2.865 meters asl.; inland and coast



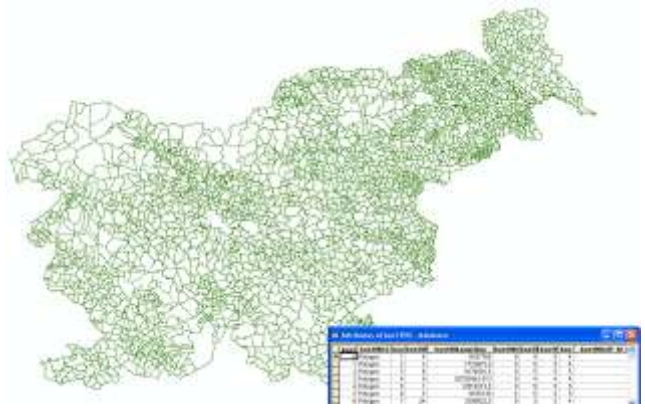
Data sources



Czechia */Charles University in Prague*

LUCC database: 8.903 BTUs (Ø 8,6 km^2); 7 LU classes; 1845-1948-1990-2000; based on cadastral data

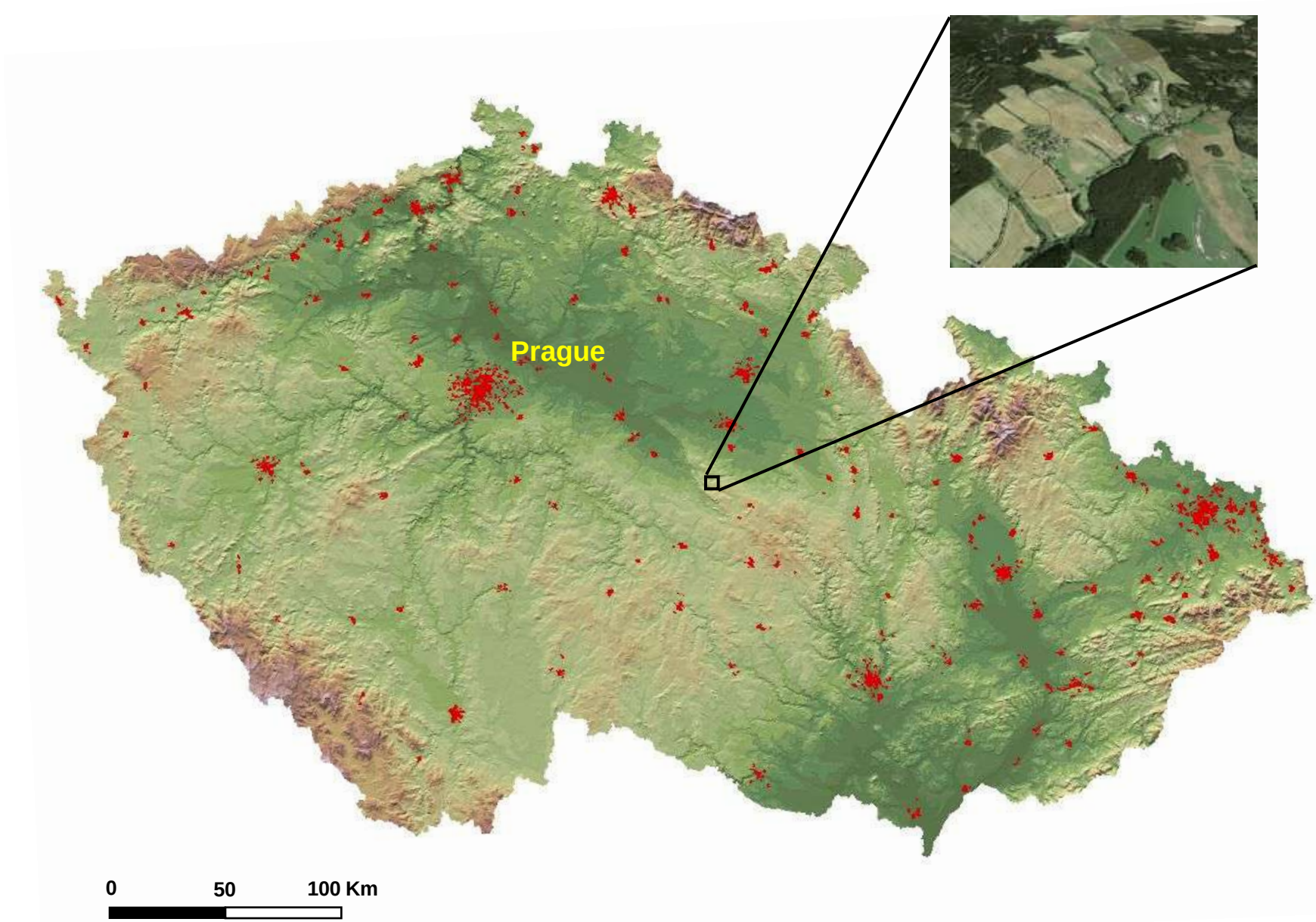
Model areas: 16 in different regions; 27 LU classes; detail map comparison 1845-today



Slovenia */Geographical Institute of Anton Melik*

LUCC database: 2.635 BTUs (Ø 7,7 km^2); 4 LU classes; 1825-1900-1961-2002
(the year 2002 based on ortofoto data)

Czechia - heterogeneity of the landscape



Czechia - examples of landscape

Land use at **different spatial levels** / distinquisgible units

Cadastres:

local Land use pattern

5 km

District:

composed by cadastres

15 km

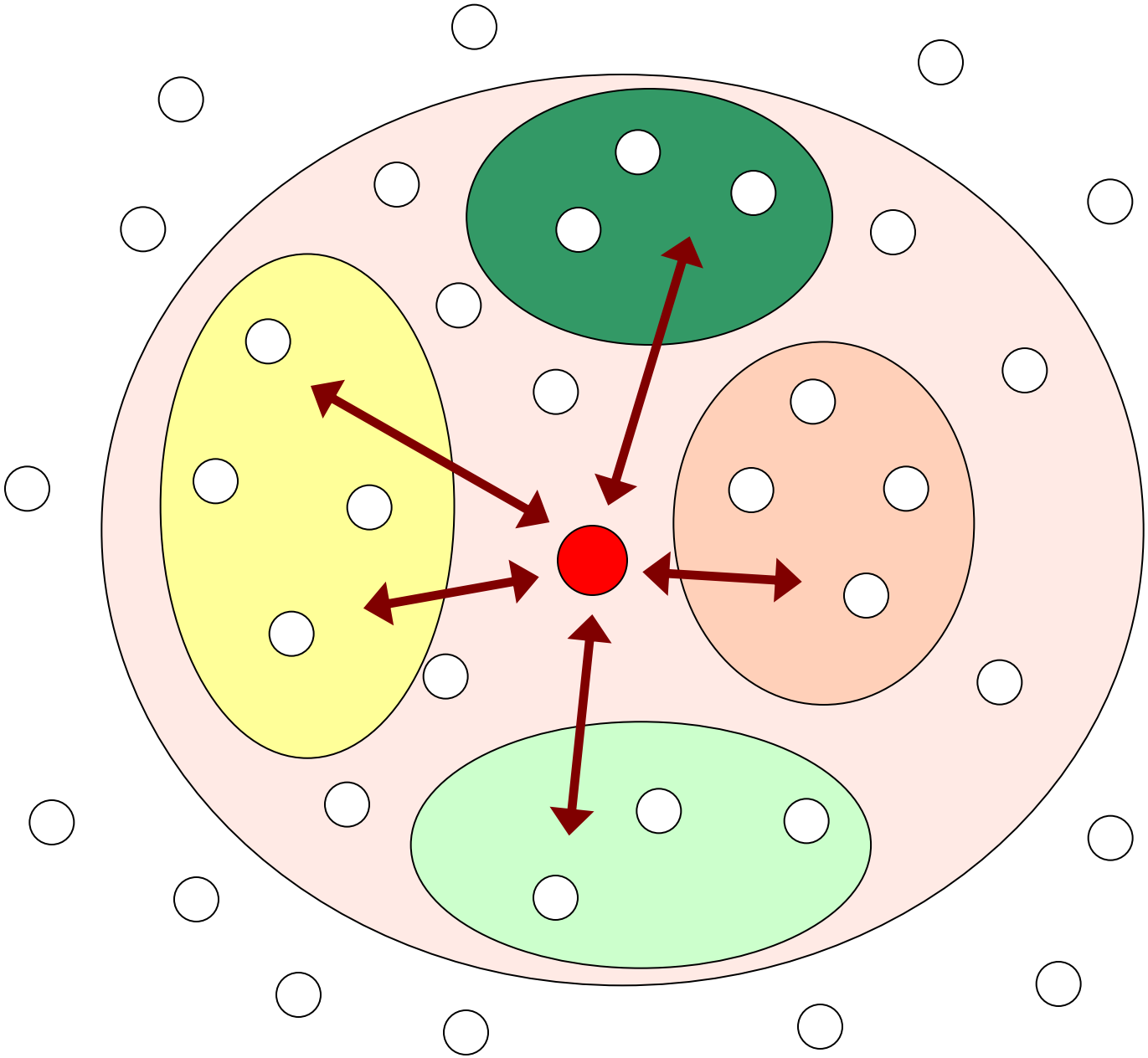
Region:

regional town and its backgound

50 km

Pattern of distribution of Land use categories has a hierarchical character

Shifting to higher levels



Today

Industry

Slavs coming

Iron Age

Bronze Age

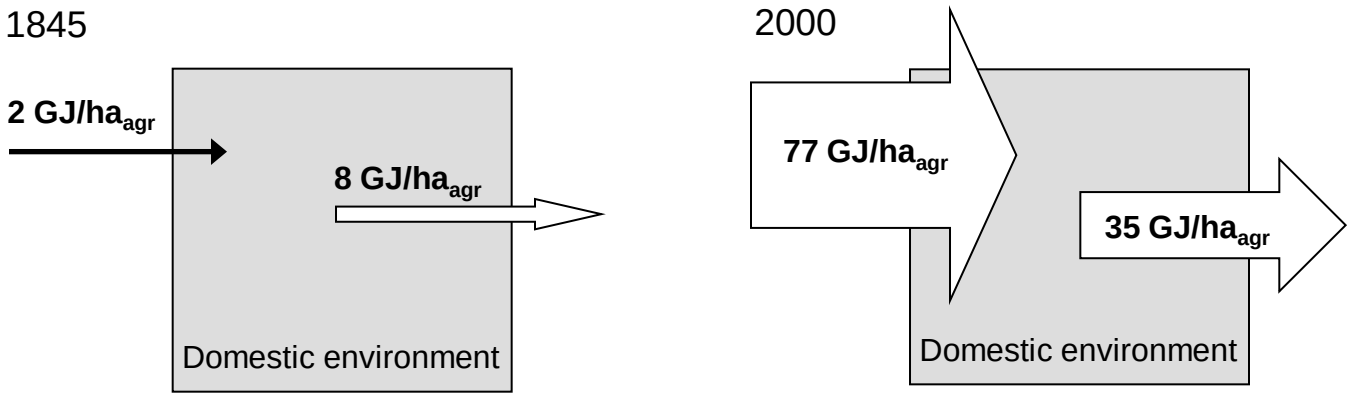
-5 000

Neolithic revolution

-10 000

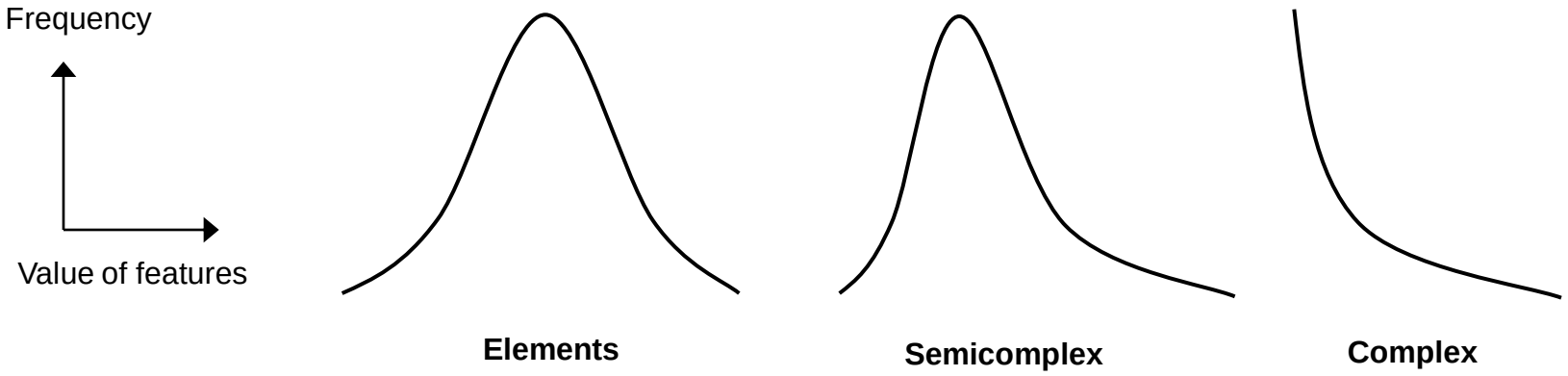
End of Ice Age

Fridolin Krausmann - Energy flows into/from **local unit**



According to Krausmann at al. (2004)

Martin Hampl - Frequency distribution of features of **elements X complexies**



According to Hampl (1998)

Proof 1: Data variance in BTU sets

	% ARABLE LAND			
ZUJ	1845	1948	1990	2000
1	69	77	73	72
2	60	66	56	53
3	42	36	15	16
4	48	49	46	46
5	67	71	51	50
6	14	15	13	12
7	36	37	32	32
8889	34	30	23	23
8890	22	20	17	17
8891	58	65	62	52
8892	47	48	17	13
8893	68	64	24	20
8894	74	74	70	69
8895	47	42	37	37
8896	48	47	27	28
8897	17	16	15	15
8898	39	37	38	38
8899	62	59	58	58
8900	51	47	54	54
8901	42	40	45	45
8902	72	73	70	69
8903	57	60	52	49
VARA	351	396	511	578
STDEVA	18,73	19,89	22,60	24,05

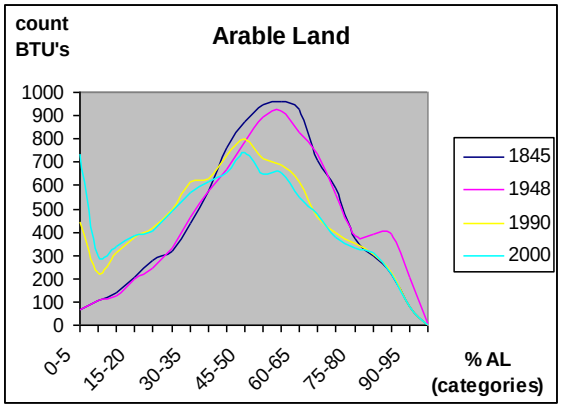
	1845	1948	1990	2000
AL	351	396	511	578
PK	2	4	14	14
PGL	89	72	94	149
FA	409	416	458	459
WA	7,4	6,6	9,4	9,7
BuA	0,3	0,8	1,8	1,9
RA	1	2	50	51

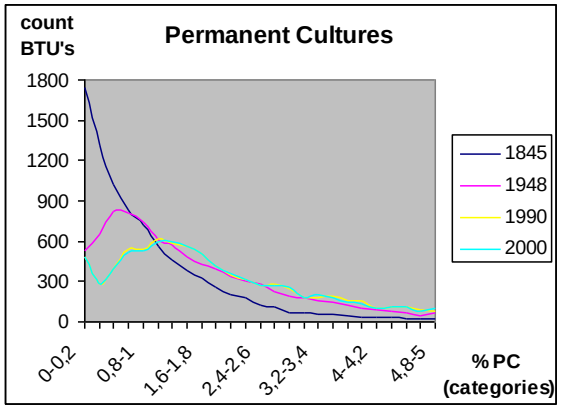
	1845	1948	1990	2000
AL	18,73	19,89	22,60	24,05
PK	1,41	1,89	3,79	3,80
PGL	9,45	8,51	9,69	12,21
FA	20,22	20,40	21,39	21,42
WA	2,71	2,56	3,07	3,11
BuA	0,56	0,87	1,32	1,38
RA	1,11	1,30	7,07	7,13

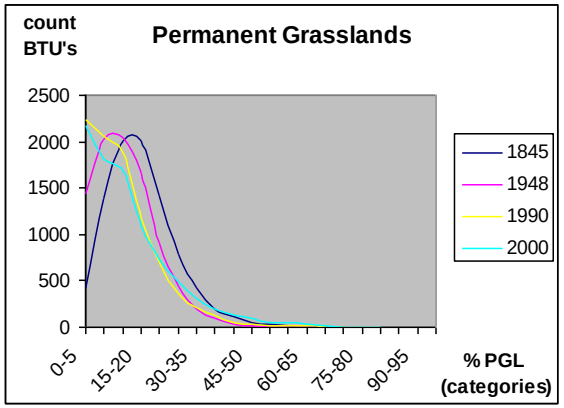
→ Increasing variance and standard deviation

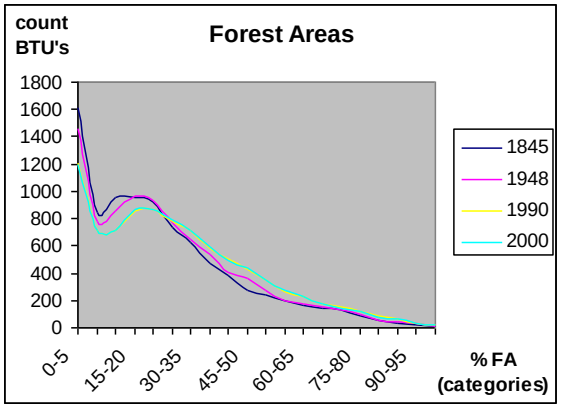
→ Mean value is less and less important

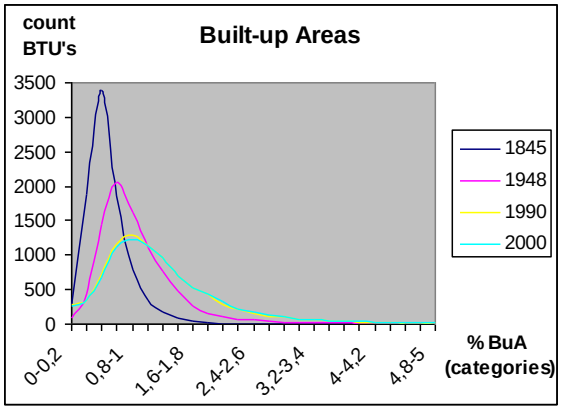
Proof 2: Frequency of BTUs in classes of % share of…

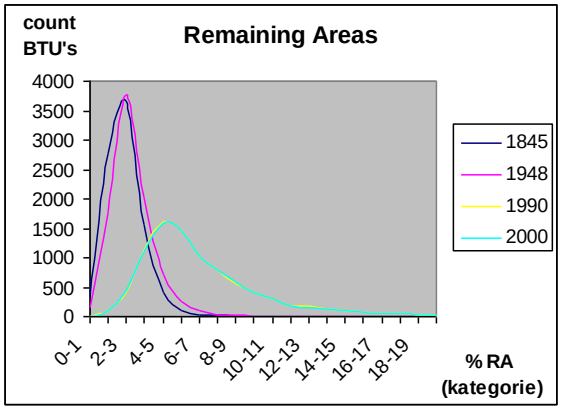










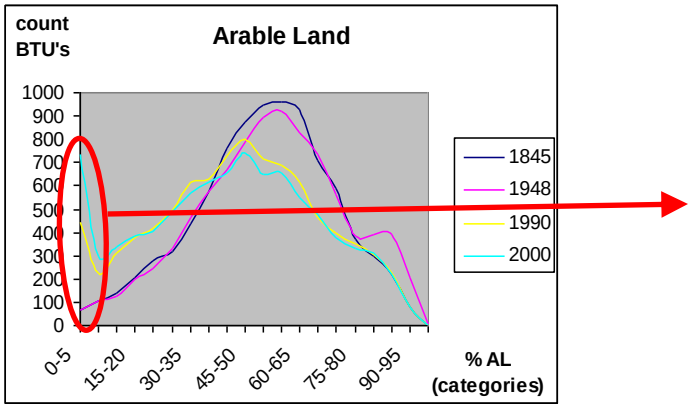


→ Peaks are still lower (less average BTUs)

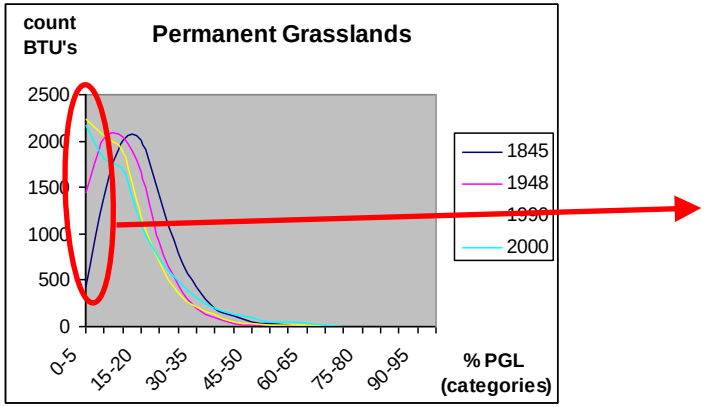
→ Rising „foothills“ of the peaks (more extreme BTUs)

Where the changes have taken place…

BTUs that entered the interval of 0-5% of Arable land between 1845-2000

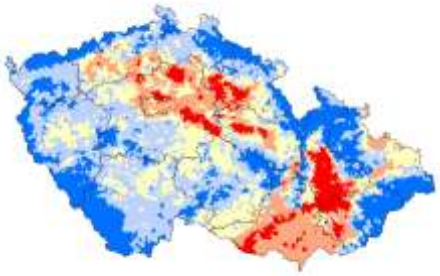


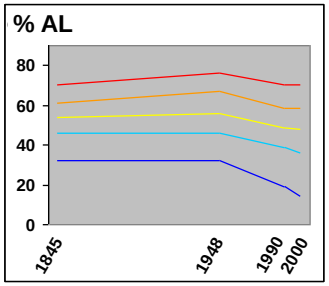
BTUs that entered the interval of 0-5% of Permanent grasslands between 1845-2000



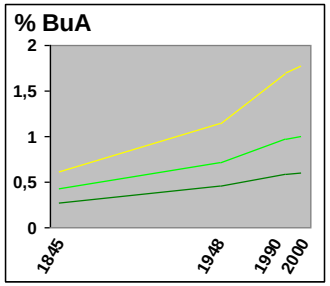
Proof 3: Land use development according various divisions of Czechia

Price of agric. land - Arable land

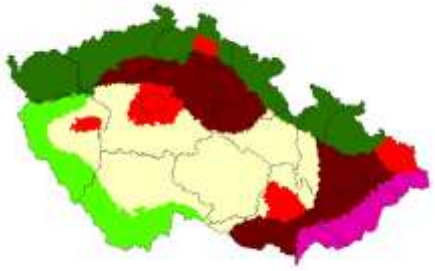


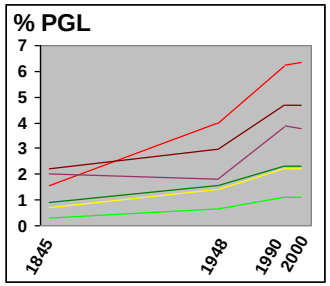


Nature protection - Build-up areas

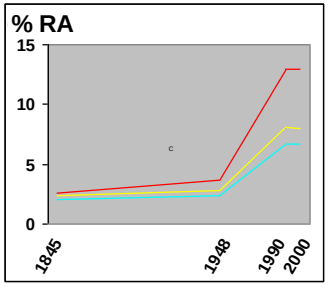


Types of countryside - Permanent grasslands

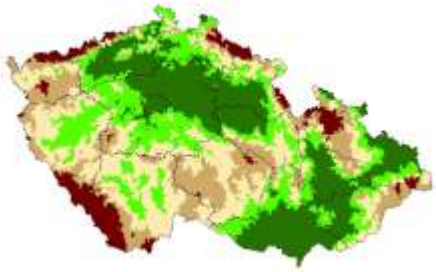


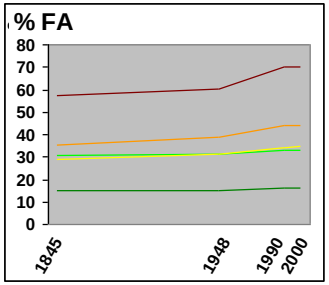


Societal exposedness - Remaining areas



Altitude - Forest areas





→ „Scissors“ of differences are opening

→ The specialization process is accelerating

Proof 4: Map analysis of model areas

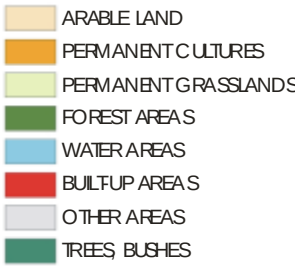
Trebsin 1845

Trebsin 2008

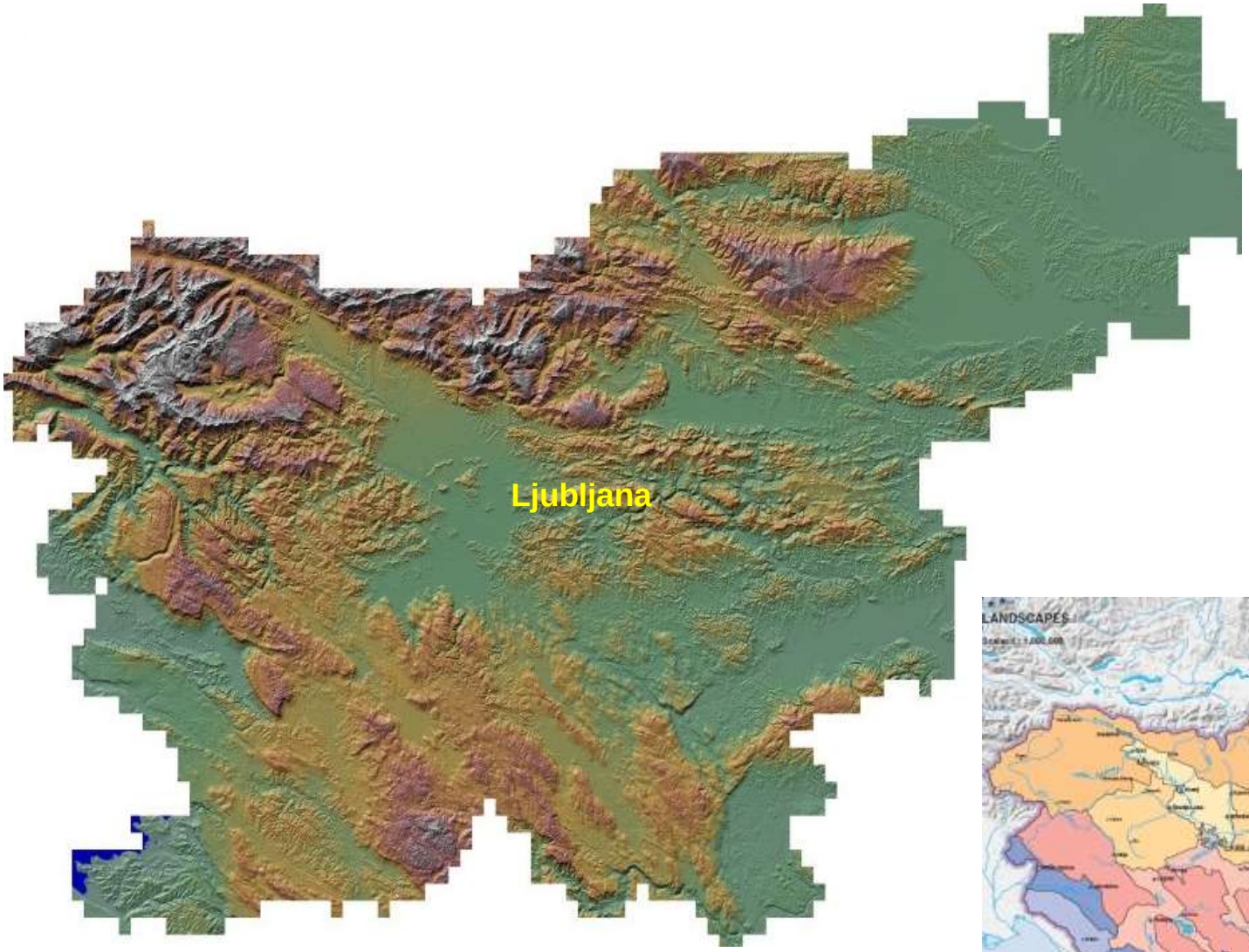
Oldrichov 1845

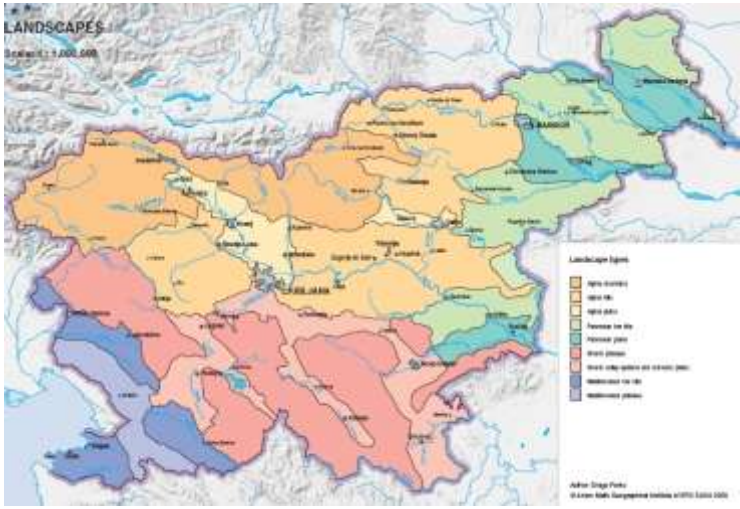
Oldrichov 2008

→ Cadastres in 1845 more similar, today different

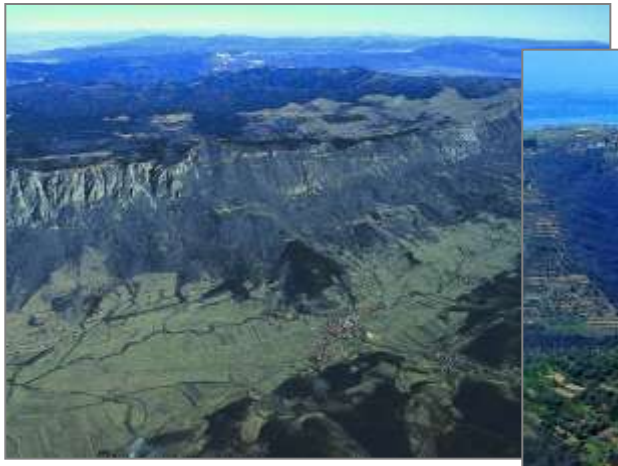


Slovenia - heterogeneity of the landscape



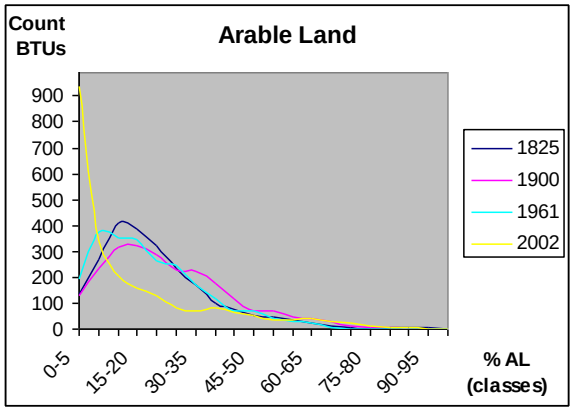


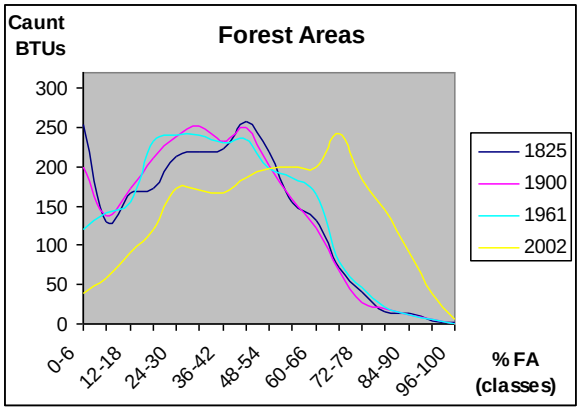
Czechia - examples of landscape

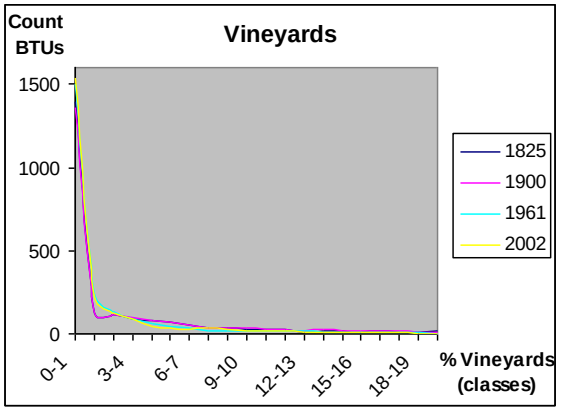


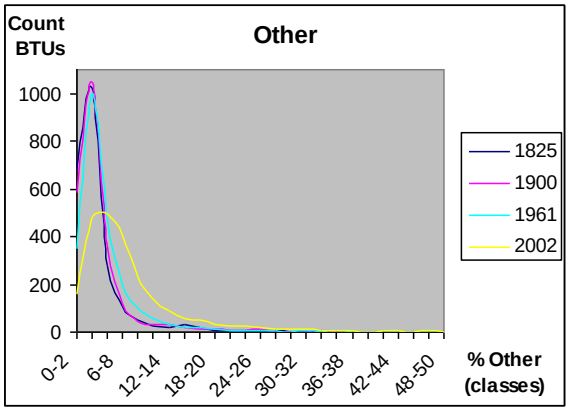
Slovenia - validating the theory?

Frequency of BTUs in classes of % share









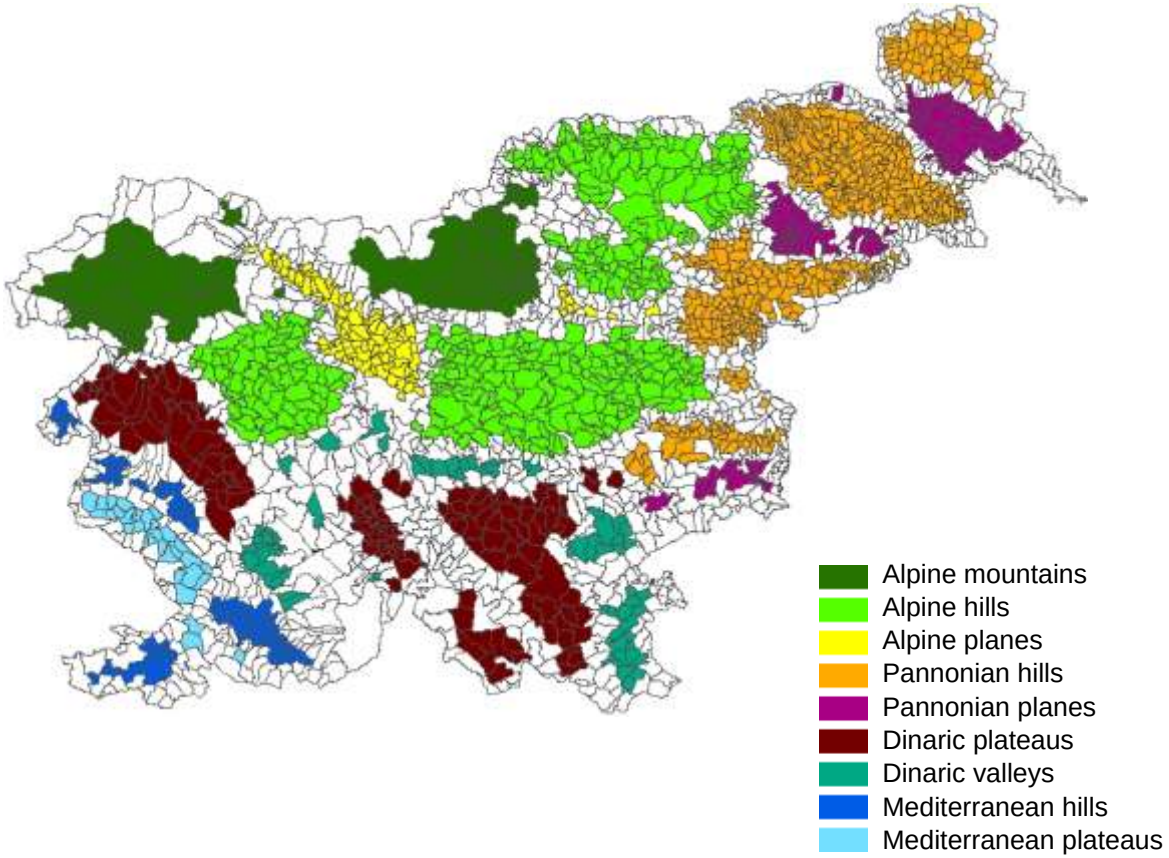
The variation

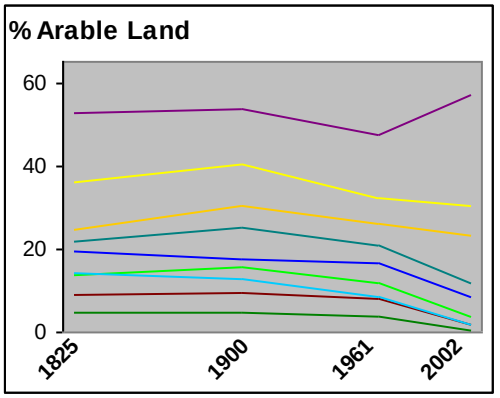
	1825	1900	1961	2002
AL	211	249	199	365
FA	433	390	383	498
Vineyards	48	54	20	27
Other	26	21	23	60

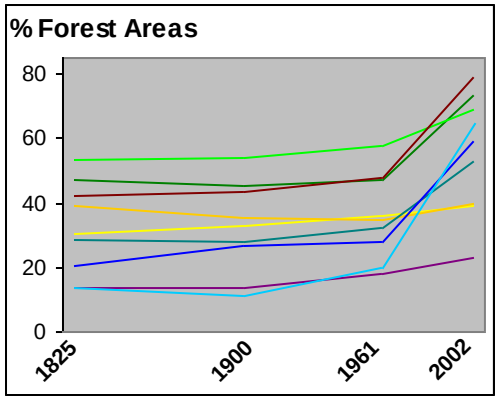
→ General trend similar as in Czechia

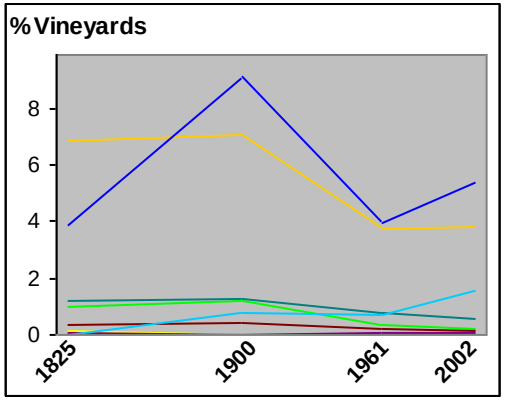
→ More exceptions

Land use development in „Nature regions“









→ Infulence of „Yugoslav“ period

→ Slovenia as one specializing part of this „higher“ unit

Conclusions

► Regional differentiation - a **sign of emphasizing of societal integration** within the „higher“ unit

► Diversification runs **simultaneously at several spatial levels** - difficult to describe easily

► Last 170 years: opening of a local cycle, Land use heterogeneity has been **shifting from cadastral to regional level**

Other questions

► Ecological issues (changes of biodiversity; floods and erossion…)

► Societal issues (haw people percieve vast areas with similar Land use…)

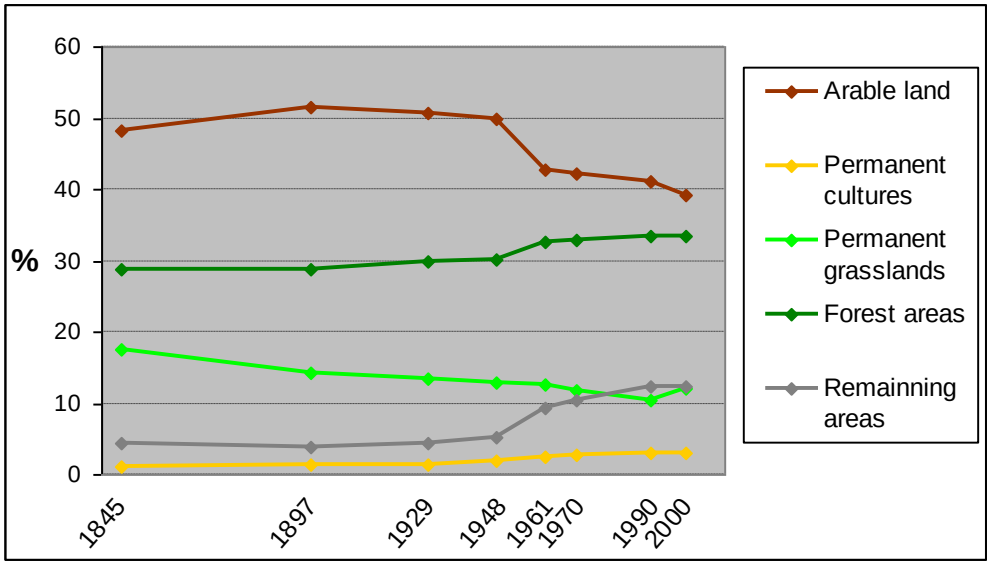
► Teoretical questions (self-similarity of Lad use; theory of complexes…)

► **...**

Thank for Your attention!

Land use development

Czechia



Slovenia