



EUROPEAN UNION
European Regional
Development Fund



EUROPEAN TERRITORIAL CO-OPERATION
AUSTRIA-CZECH REPUBLIC 2007-2013
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Is the soil sealing really a serious problem for the future?

Development of soil sealing in Central European countries, attitudes and opinions of the municipalities

How to protect soil?

Legislative approach = restriction of private rights

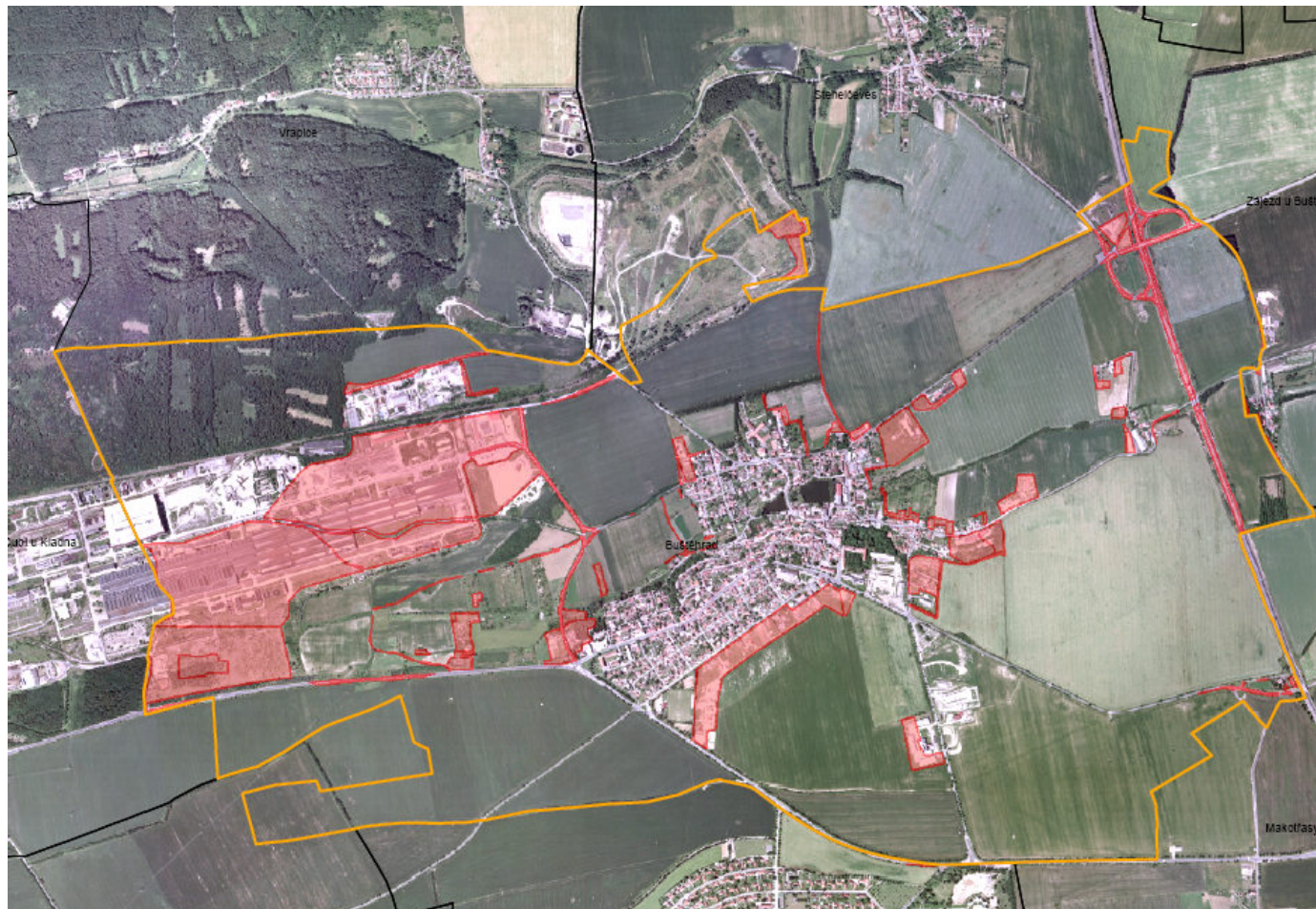
Economic approach = support of management for soil protection

Ethic approach = to live in respect with the soil and take it as one of the basic conditions for the life on Earth

Ethic rules

- Man is not an unrestricted ruler on Earth
- Soil is very complex and vulnerable creature
- The bases for life must be sustainable even for the future generations
- Balancing the conflicts both among nations and among all living organisms including man

SOIL SEALING – A CONTROVERSIAL TOPIC OF THE SOIL DIRECTIVE PROPOSAL



IMPACTS OF SOIL SEALING

- Loss of fertile soil for food and feed production
- Disturbance of natural processes in geobiosphere
- Higher risk of floods
- Impairment of groundwater supply
- Higher risk of water pollution
- Loss of biodiversity as a result of land fragmentation
- Losses on recreation and landscape functions

IMPACTS OF SOIL SEALING

- Built up areas grows more rapidly than the population
- Since 1950 the area of European cities expanded by 78 %, while the population by 33 %
- In some countries (Denmark, Belgium, the Netherlands) the built-up area reaches up to 16 - 20 %)
- In the ČR the built-up area reaches 10 %.

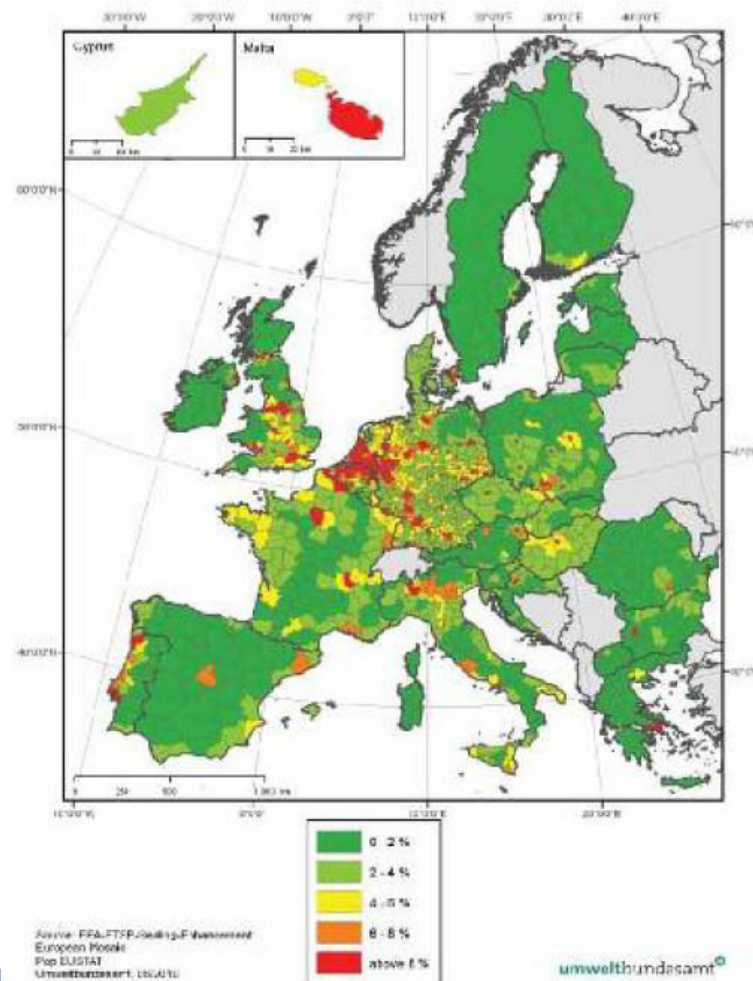
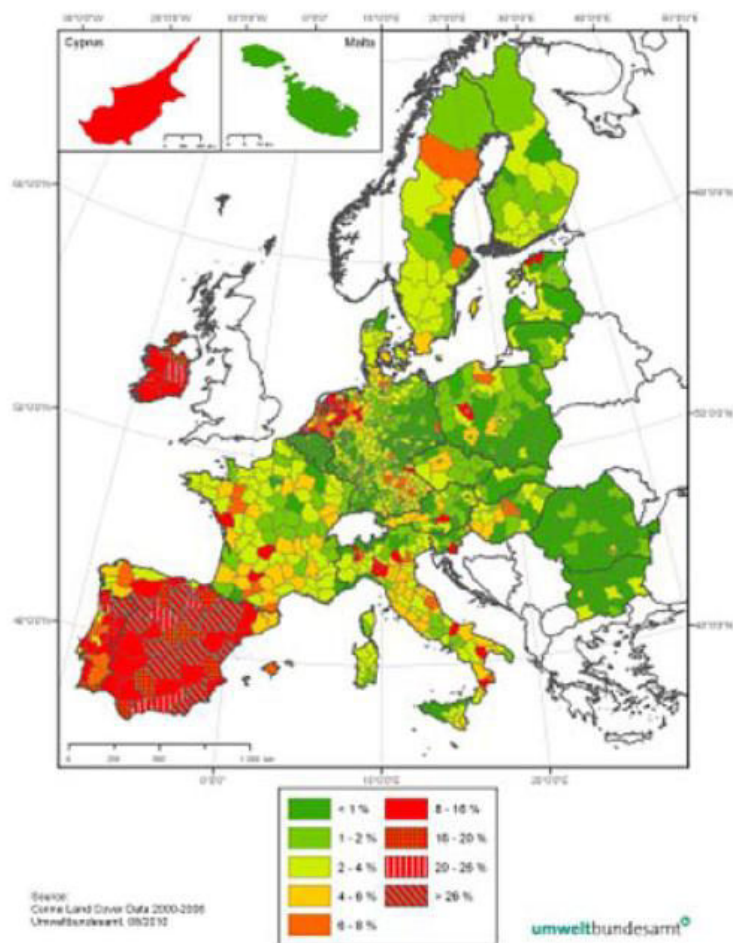
Soil sealing



European Commission

Land take per administrative unit in the period 2000-2006

Soil sealed surface in 2006



STATE AND DEVELOPMENT OF SOIL SEALING IN EU

Impact assessment of the Thematic strategy on soil protection:

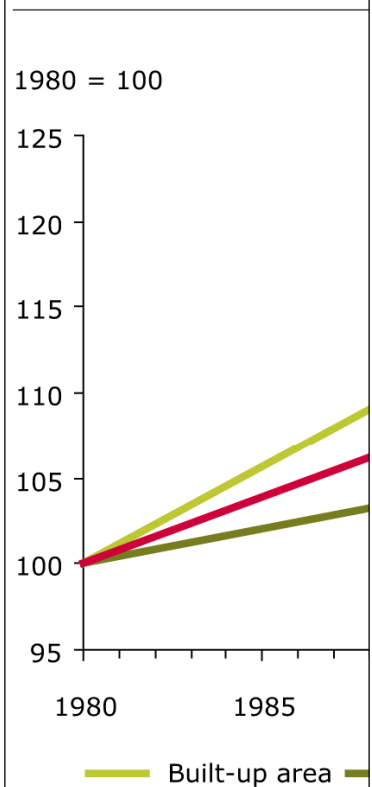
On average the area of the soil surface covered with an impermeable material, is around 9% of the total area in Member States.

During 1990-2000 the sealed area in EU15 increased by 6% (Corine Land Cover),

Soil sealing through urbanisation dominates in the more densely populated regions and major industrial areas of Western Europe in particular Belgium, Denmark and the Netherlands, where 16-20% of the surface is built up.”

STATE AND DEVELOPMENT OF SOIL SEALING IN EU

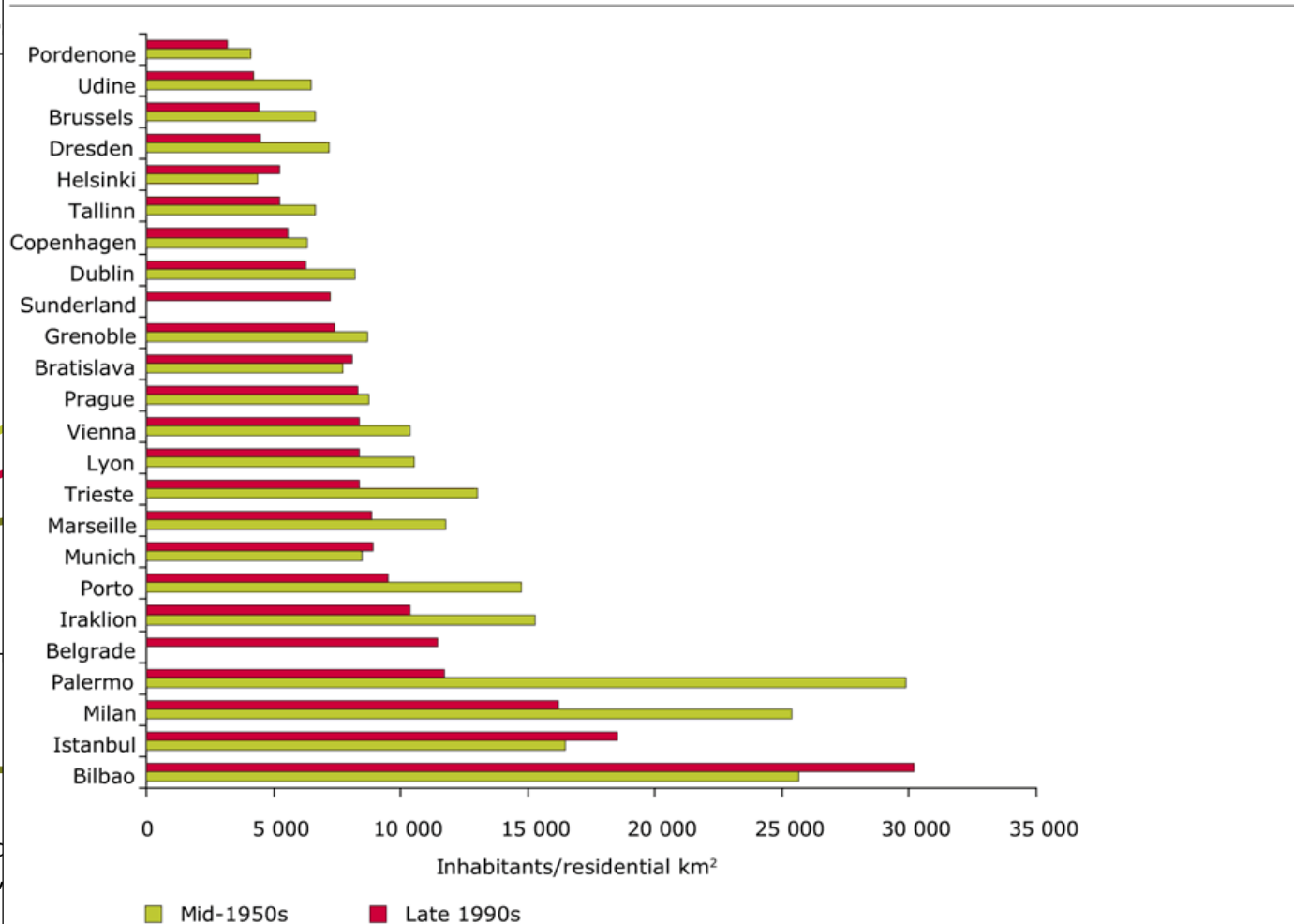
Figure 3 Built-up population countries



Note: Countries covered: Denmark, France, Netherlands, Poland

Source: EEA, 2002.

Figure 5 Residential density in mid-1950s and late 1990s (measured by inhabitants/residential km²), selected European cities



Source: MOLAND (JRC) and Kasanko *et al.*, 2006.

STATE AND DEVELOPMENT OF SOIL SEALING IN THE CR

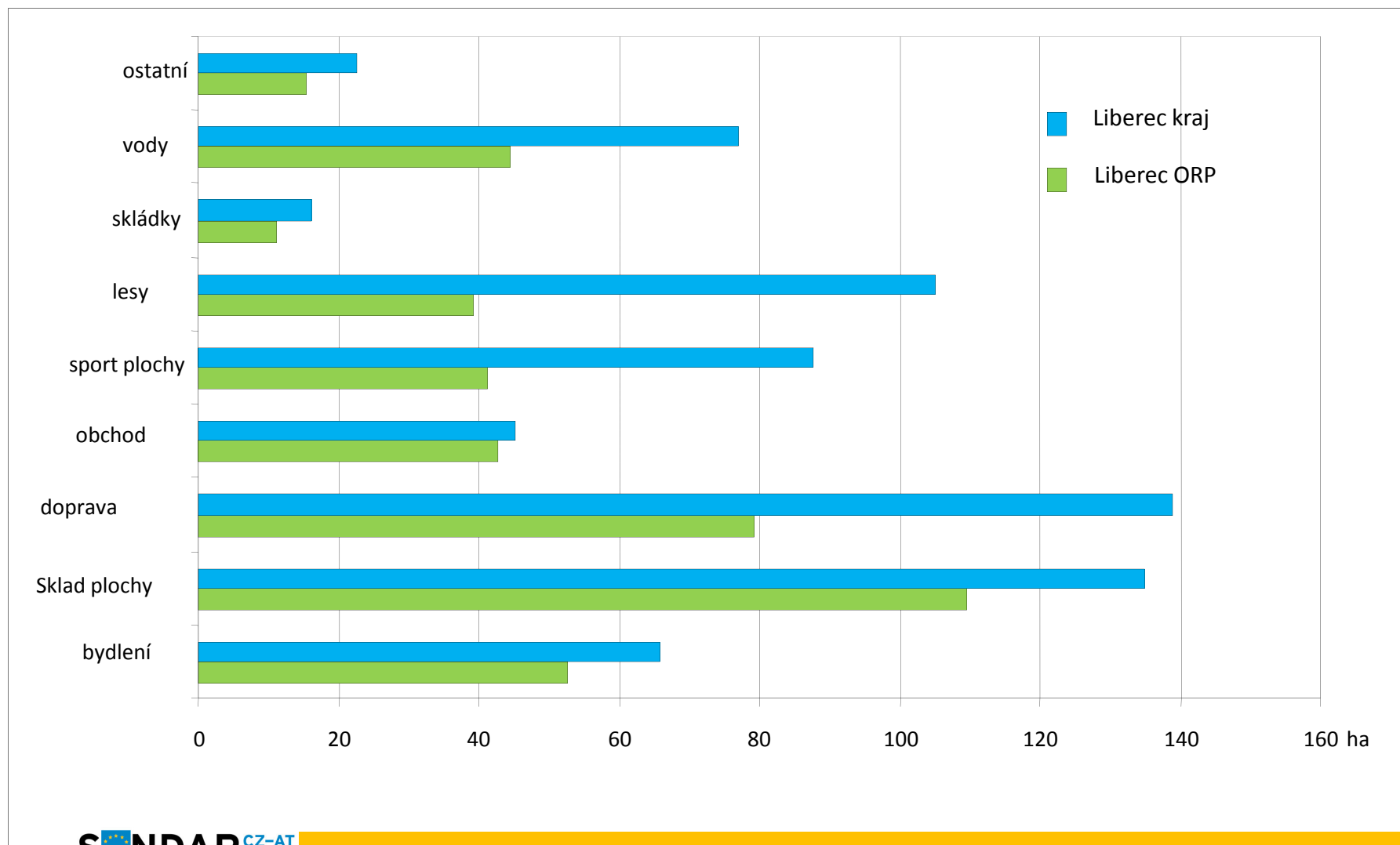
- Since 2008 cca 14 ha of agricultural soil is lost every day, mainly in the I. a II. class of protection
- Pilot area - district west of Prague - loss of 5,3% of agricultural land in last 30 years
- Loss of about 235 000 ha of agricultural land in the CR in last 40 years.
- Keeping this trend, no agricultural land will be available till the end of this milenium.



STATE AND DEVELOPMENT OF SOIL SEALING IN THE CR

period	Average for 1 year	Average for 1 day	Average for 1 second
	ha	ha	m ²
1993-2008	2586	7,1	0,8
2000-2008	3902	10,7	1,2
2008	5226	14,4	1,6

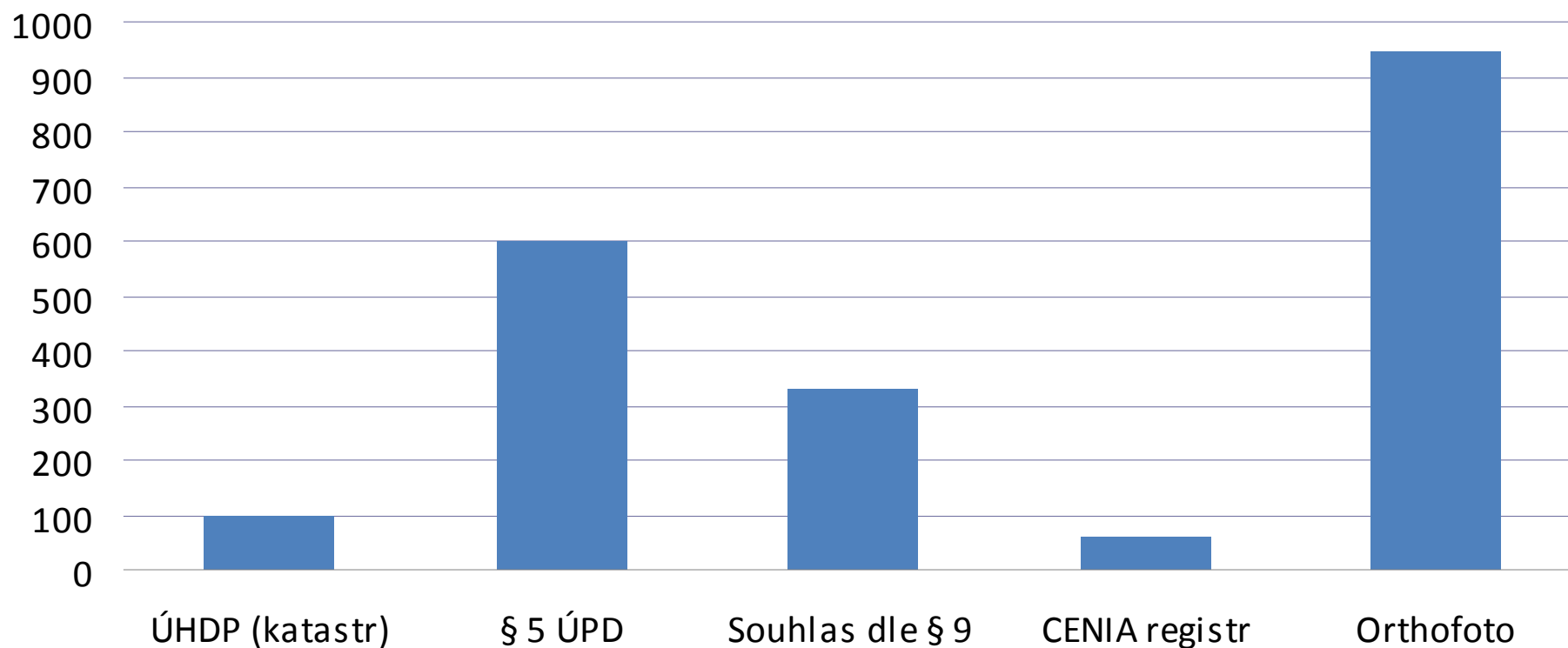
Výsledky hodnocení záborů ZPF – ztráty zemědělské půdy v období 1996-2007 (vydané souhlasy) dle návrhu využití



Hodnocení rozsahu záborů

Porovnání výsledků pro použité metody hodnocení intenzity záborů (katastr = 100%)

%



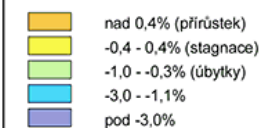
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PROGRAM OCHRANY PŮDY V LIBERECKÉM KRAJI - ANALYTICKÁ ČÁST

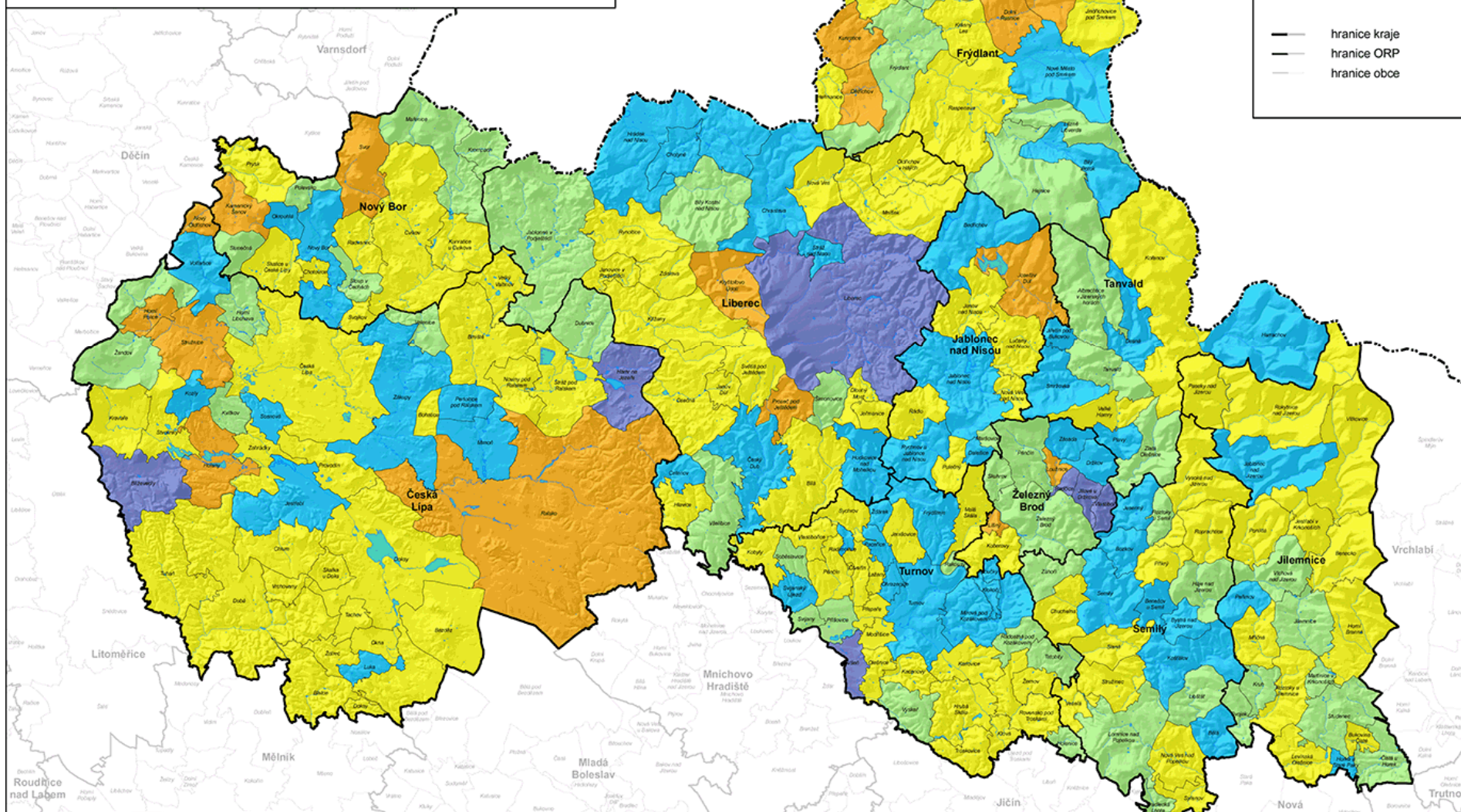
Procentické změny plochy ZPF pro jednotlivé obce
Libereckého kraje za období 1993 - 2008

0 10 20 km

změna výměry ZPF
(relativně k celkové ploše ZPF)



— hranice kraje
— hranice ORP
— hranice obce



Levies for soil sealing – land appropriation in the Czech Republic

Setting the levy:

- Basic tax according to soil quality (BPEJ)
- Coefficients according to landscape factors
- Coefficient according to class of soil protection

Allocation of the levy:

- 75% State budget
- 15% State Environment Fund
- 10% Municipal budget

Changes of levies for taking the agricultural soil before and after the Novelization of Act No. 334/1992 Sb. Examples

příklad	stavba	before Kč/ha	after Kč/ha	coeff. class. prot	multi plicat ion
1.	Silnice II/452 Bruntál – Mezina – stavební úpravy	23 000,-	274 200,-	6	11,9
		15 000,-	246 600,-	6	16,4
		40 000,-	43 200,-	2	1,1
2.	Průmyslová zóna Litovel - Nasobůrky	1 980 000,-	13 908 00,-	6	7,0
3.	Rozšíření závodu ORRERO a.s.	1 625 000,-	8 590 000,-	4	5,3
		2 475 000,-	17 385 000,-	6	7,0
4.	Multimodální cargo Ostrava - Mošnov	270 000,-	2 622 000,-	6	9,7
5.	Technologický park Olomouc - Slavonín	117 000,-	1 492 200,-	9	12,7
6.	Průmyslová zóna Přerov	990 000,-	6 954 000,-	6	7,0
7.	Silnice II/435 Dub – Tovačov – stavební úpravy	2 340 000,-	29 844 000,-	9	12,7
8.	ČS PHM Velké Meziříčí	49 000,-	49 800,-	2	1,02

Measures against sealing:

1. Preventing avoidable sealing
2. Limiting unavoidable sealing (e.g. multi-storey parking)
3. Optimising the sites where soil sealing takes place (e.g. on brown-field instead of green-field sites)
4. Mitigating the effects of sealing (e.g. by using semi-permeable surfacing).



THANK YOU FOR YOUR ATTENTION

