

# Long-term Land Use Changes in the Czech Republic

Premysl Stych and Lucie Kupkova, Charles University in Prague, Department of Applied Geoinformatics and Cartography,  
E-mail: stych@natur.cuni.cz

Territory of the Czech Republic has occurred significant land use/land cover changes since half of 19<sup>th</sup> century. The major societal driving forces of land use changes have been:

I: The Revolution of 1848/49; The abolition of serfdom, land becoming a free good; The extensive development of agriculture.

II: The transition to agricultural intensification; Greater impact of differential rent II;

III: The 1st phase of the technological-scientific revolution in agriculture; the impact of World War I.

IV: The 1st land reform; Onset of the use of electricity and the combustion engine in agriculture;

V: The large economic crisis of 1929–1933; the impact of World War II; German occupation of Czechia.

VI: The transfer of the Czech Germans 1945–1948; The Communist revolution; Extensive development of the economy and its nationalization; Collectivization of agriculture.

VII: Economic depression; Attempts at agricultural intensification deepening; Completion of collectivization.

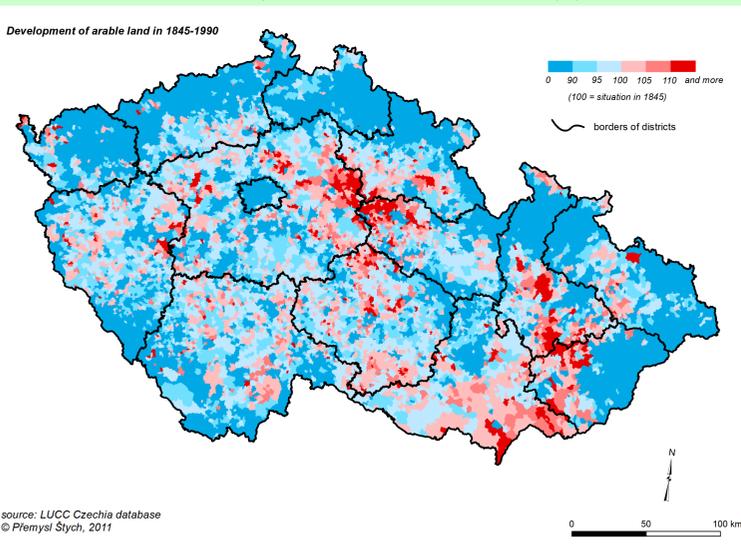
VIII: Economic stagnation; Joining of small cooperatives and state farms; Simplification of rural landscapes with large plots of land;

IX: The Velvet revolution 1989, Re-introduction of the market economy; Restitution of private property and land; Capital transformation of cooperatives [cooperatives of owners] and privatization of state farms; Increase of small-scale farming; Competition between Czech and more better subsidized agricultural products from abroad.

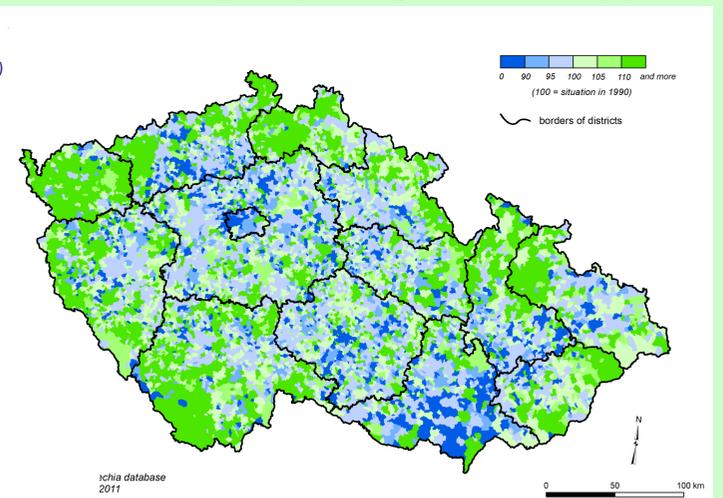
X: 2000 – 2010: Preparation and realization of accession to the EU; Competition between Czech and the better subsidised agriculture of the older EU Members States.

The results indicate that there is a trend of deepening differentiation of land use/land cover changes based on natural conditions and socioeconomic characteristics of regions. Since the end of the 19th century regional polarisation has been deepening. Two antagonistic processes have been taking place in the land. Fertile and socio-economically valuable regions have experienced intensification, accompanied by high increase of built-up area. On the other hand, infertile and remote regions have experienced extensification, accompanied by grass planting and forestation. Intensive human activity has increasingly been concentrating in favourable areas. More hostile peripheral areas have demonstrated long-term orientation to extensive forms of land use and have been experiencing the process of marginalisation. Decrease in the area of agricultural and arable land is obvious in peripheral mountain regions. In between these extremes there are "average" areas, from the point of view of both nature and society. Here, the smallest land-use changes have taken place.

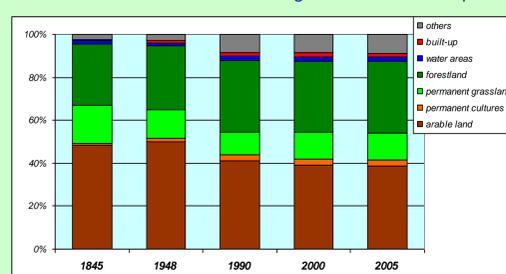
Development of arable land in 1845-1990 (%)



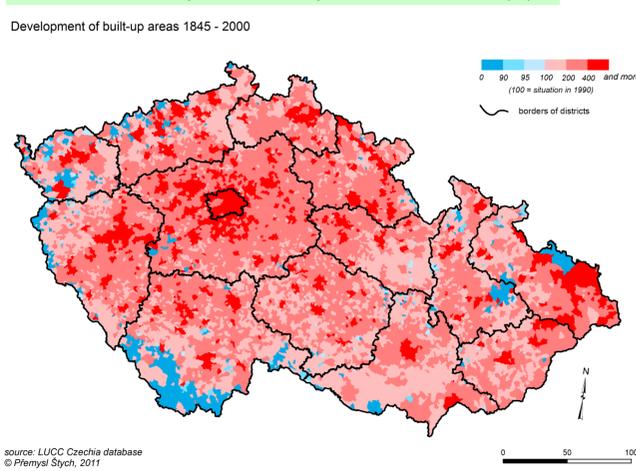
Development of permanent grassland in 1990-2000 (%)



General trends of land use changes in the Czech Republic (%)



Development of built-up areas in 1845-2000 (%)



## Urban Sprawl

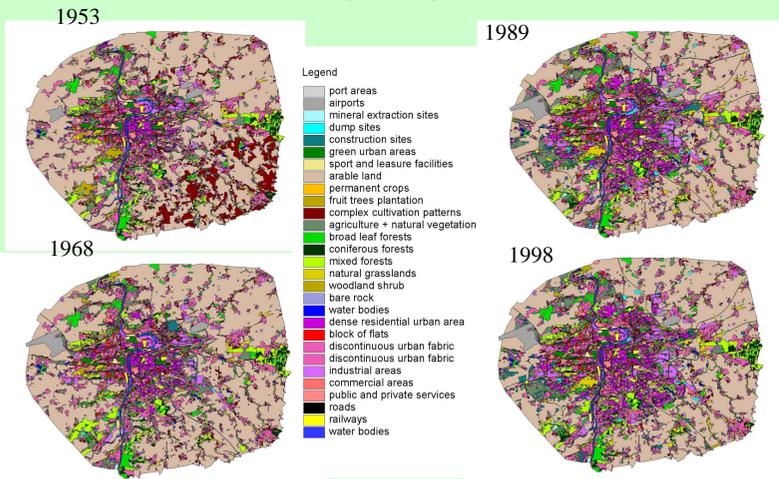
Since the process of economic transformation has started in 1989 in the Czech Republic, the problem of the usage and the change of sub-urban space have become very relevant.

Before the velvet revolution (1989) the expansion of cities into the surrounding landscape was very limited because of many factors typical of the socialist system:

- land market, private property and market economy didn't exist
- effort to reduce the regional differences was very high
- financial sources were distributed by special rules for settlement structure
- the law for land preservation was very strict.

However after 1989 with the re-installation of a market economy, private property and land market, residential activities increased, in particular commercial, industrial and infrastructure usage of the space in sub-urban areas. The pressure on landscape and building activities on fertile soils have extremely increased especially in the middle of 1990s.

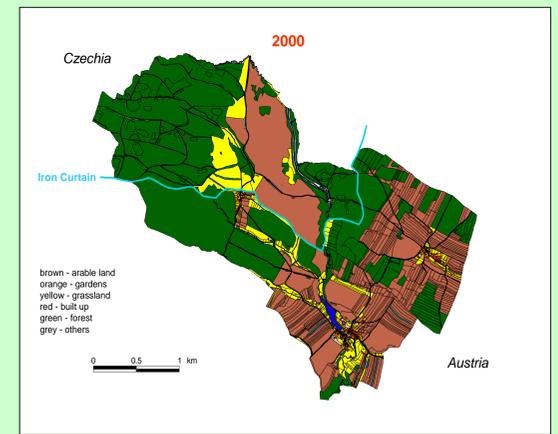
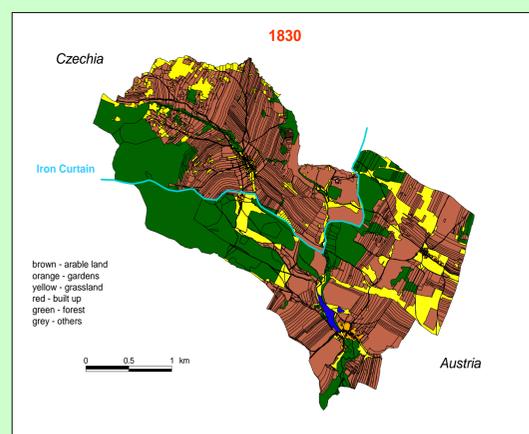
Land Cover changes in Prague metropolis



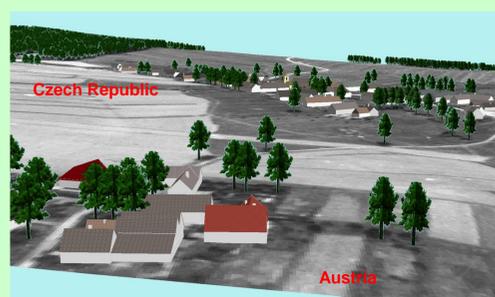
## Cross-border changes

The analysis of land cover changes near the Iron Curtain provides comparison between land use development in the Czech Republic and Austria, countries under different political and market conditions. The types of changes that occurred on both sides of the border also differ. Transfer of the German minority from borderland, installation of Iron Curtain caused very important changes in landscape and the settlement desertion in the Czech Republic in the 20th century. In Austria, on the contrary, land cover changes were not so dramatically. In assessing all of these tendencies it is necessary to keep in mind that the share of the changes mentioned on the Czech side was significantly greater than the share of changes in Austria.

Long-term Land Use changes in Czech – Austria borderland



3D visualization of land use changes of settlements Klein Taxen (Austria) and Košťálov (Czech Republic)



Land cover changes in suburban areas

