
Impacts of commuting on the spatial development and ecological footprint of the Budapest Metropolitan Region

Tamas Egedy*^{†1}, Zoltán Kovács¹, Attila Csaba Kondor¹, Cecília Szigeti², and Balázs Szabó¹

¹MTA Research Centre for Astronomy and Earth Sciences, Geographical Institute (MTA RCAES) – Hungary

²Széchenyi István University – Hungary

Abstract

The change of regime in 1989/90 opened up a new era in the urban development of Hungary. Political and economic conditions for urbanisation have radically changed, as a result of which new spatial processes have begun. Due to massive residential suburbanisation, the former territorial balance between jobs and dwellings has been overturned. The transformation of the spatial structure and the urban network has moved towards polycentric development. The significance of traditional commuting from villages to the city core has been reduced while new forms of commuting have emerged, such as reverse commuting from the city core to suburbia and commuting between cities located within the suburban zone.

Spontaneous suburbanisation and uncontrolled urban sprawl has brought about a significant transformation in the urban environment. One of the environmental challenges of post-socialist urbanisation is that, while the ecological footprint of areas inside the city has dropped significantly since 1990 due to the modernization of heating and transport systems, the spread of selective waste management, and the decreasing consumption of the shrinking population, the environmental load on suburbia has increased spectacularly. Research on the ecological footprint in Hungary has not yet covered the effects of commuting, so our research provides new results on the environmental impacts of spatial development (i.e. suburbanization and urban sprawl).

During our investigation, we first defined the metropolitan region of Budapest using the 15% commuting threshold applied to the functional urban areas of the EU and the OECD. This area is significantly different from that of the well-known agglomeration of Budapest. Then, using the 1990, 2001, and 2011 census databases we explored the volume and main directions of commuting, and analysed the modes of commuting respectively. This enabled us to examine the composition of commuting by means of transport, which was the basis for ecological footprint calculations.

Based on our analytical results, the following questions will be highlighted in our paper: i) What are the current trends of commuting in the metropolitan region of Budapest and what are the characteristic features of the spatial restructuring processes that were initiated as a result of suburbanization and urban sprawl since the change of regime? ii) What fundamental trends can be discovered in the changes of commuting modes, and what impacts did

*Speaker

[†]Corresponding author: egedy@gmx.net

and could they have an effect on the ecological footprint? iii) How did commuting contribute to the changing ecological footprint of the Budapest metropolitan region since 1990?

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