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### **Modelling land cover change in Hungary: forecasts for 2050**

The fundamental changes in the social and economic processes in Hungary after the political and economic transition also had an impact on the land cover of the country. Due to the residential and economic suburbanisation, the share of artificial surfaces significantly increased in the agglomeration in Budapest, and — to a smaller extent — near to the regional centres. Although the direct effects of the changing market conditions to the land cover are rather limited to this point, the transforming farm structure bears the possibility for extended changes in the future. Moreover, climate change also poses a challenge to the agriculture; a well-known example is the ongoing aridification of the Danube-Tisza Interfluve.

The aim of our paper is to present a forecast of the probable changes in the land cover for the first half of the twenty-first century. A regionally downscaled version of the IPCC4 A1b climate model was used to integrate the changing climatic conditions into the model. We also took the predicted social and economic processes into account. The long-term plans of the central government were also built into the forecast, especially concerning afforestation and the extension of road network. The previous results indicate a further increase in artificial surfaces, but with a lower rate of transition than in the first decade of the century. A large part of the land will be taken out of agricultural land use for afforestation, but in a spatially uneven pattern. Agricultural areas with increased vulnerability due to the changes in the climatic conditions are also outlined.

The presented research findings are results from the ongoing research project Long term socio-economic forecasting for Hungary (EEA-C12-11).