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# Wind erosion and dust dynamics on the southern part of the Great Hungarian Plain

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**The gradual increase observable in aridity values and the increasing susceptibility to heavy droughts in Hungary should be attributed to a possible climate change affecting primarily the area of the Great Hungarian Plain, and most heavily the region of the Danube-Tisza Interfluve. The observed trends of rising temperatures, decreasing precipitation rates, as well as the gradual drop in soil moisture and groundwater levels recorded in regional studies all tend to influence the potential susceptibility of an area to wind erosion as well. One of the major goals of our wind erosion studies was to develop a database, which might be not only useful in directing the attention of decision makers to the potential hazards of wind erosion in the agriculture, but to an important and very serious environmental and public health problem observable in several settlements of the Great Hungarian Plain: dust pollution of the air. According to the measured and calculated erosion rates taken from wind erosion models, 20-45% of the pilot area could be considered as potentially violated by wind erosion. Based on the classification prepared via the analysis of the satellite images the regions potentially liable to wind erosion exceeded 40% of the pilot area of the Danube-Tisza Interfluve, 9% of which was moderately and highly affected by wind erosion. If these values are taken approximately as the real values at least in their magnitude, then during April 1997 at least a total of 70 million tons of sand must have suffered transportation in the area of the Danube-Tisza Interfluve. In case of a natural wind erosion process 10-20% of the total transported matter is given by dust particles. Based on this value approximately 7-14 million tons of dust could become airborne during our studied period causing significant air quality problems in the nearby settlements. In the investigated settlements of the area**

**we detected that dust immission significantly exceeded the end values for many times in the analyzed periods (1995-2001 and 2004-2006). We found that this is closely related to spring wind erosion and dust emission from agricultural fields.**