



Elaboration of the Soil Monitoring Module of the Hungarian Agro-Environmental Program and preparation of the National Soil Degradation Monitoring System

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The National Agri-Environmental Program (NAEP) started in 2000 in Hungary. The Monitoring System of NAEP aims at the demonstration of improving influences of the various agri-environmental target projects on the state of the environment. The expected positive regional effects can be proven by appropriate spatio-temporal analysis of permanently expanding and suitably linked thematic databases. The two main environmental targets of the programs are biodiversity and soil. As a consequence there are strong expectations on adequate and continuous soil state evaluation, which can support the verification of the realized objectives. The Soil Monitoring System of NAEP represents the framework of the related activities. In our paper we present the pursuits carried out for the elaboration of the system, which involved the followings:

- Definition of soil state features, soil functions, soil processes, soil threats and degradation processes which can be related to the presumable improving effects of the various agri-environmental target projects in order to be monitored.
- Working out of a complex, hierachic sampling strategy (definition and designation of sampling units representing multipurpose spatial representativity; determination of their number and spatial distribution).
- Selection of appropriate soil indicators.
- Elaboration of protocols for the measurement parameters of the selected indicators.
- Spatio-temporal redistribution of measurements along the predefined sampling units and over time.
- Estimation of financial aspects of the actuation of the system.

The elaboration of the Soil Monitoring Module of NAEP also initiated a program for the establishment of a national soil monitoring system for the follow up of the (harmful) changes in soil conditions. The planned National Soil Degradation Monitoring System should support the inauguration of the European Soil Framework Directive. A successful proposal opened the feasibility of such a system; its scheme and conceptual model is also presented.