Financed research

Project title:	Elaboration of the Soil Degradation Subsystem (TDR) of the National Environmental Information System (OKIR)
Leader of the consortium:	Institute for Soil Science and Agricultural Chemistry, Centre for Agricultural Research, Hungarian Academy of Sciences
Partners:	
Objectives of the project	The project aims at: • the production of soil data required for soil protection, • monitoring both soil state and environmental impact of agriculture, • in addition, the creation of an IT background in order to facilitate the implementation of directives specified in the EU soil protection strategy. • Furthermore, the project aims at publishing soil data and information in order to support the implementation of related public services and information to the public. During this IT development project a Soil Degradation Information System (TDR) will be created as a part of the Hungarian Environmental Information System (OKIR). The participants of the consortium will carry out the following tasks: • representative selection of agricultural holdings, • environmental load data collection at the selected holdings, • indication modeling, • soil data collection based on field sampling in representative sampling design, • soil state indication
Results in 2012	It has been completed the voluntary data provided data collection and data entry of Farming logs for describing the management technologies and its environmental loads of farms. Data of soil investigation reports and results of laboratory analyses of layered soil samples were recorded in the information system. Main physical and chemical soil properties, the nutrient status, and inorganic toxic elements and the most commonly used herbicide ingredients were analyzed. Long-term storage of soil samples was organized for future test and security control in the soil testing laboratory of NÉBIH Fejér country. Related to the agro-technical elements of the farming load indicators was determined describing the type and extent of environmental load. Calculation of indication model of load indicators are based on relationship between measured parameters of soil. In intensively used agricultural areas – especially in inappropriate land use and agricultural technology – the degradation effects are detected.

	Soil state indicators was determined to describe of the types and effects of soil degradation process based on analysis of different soil status variables. The indication models have been incorporated as a form of queries into the information system. As the load- and status data grows with space and time repetition as environmental status of soils will know better. The reasons of pilot data analyzes available on the public Web-based querying and displaying interface of TDR on address http://okir-tdr.helion.hu
Economic and social benefits:	As a reason of the project approximately 700,000 elementary data was gathered. Nearly 2,000 parcels were investigated within 285 farm's area. More than 7,000 soil sample were analyzed and 28,000 geo tagged photo was made. The numbers of the recorded parcels are 4500, with a total area of about 250,000 hectares. Based on the built-in queries pilot data analysis were performed, whose results are available through a public web query-graphic surface (http://okir-tdr.helion.hu/). The web publication visualizes the load indicators related to agro-technical elements, the physical, chemical and biological degradation indicators of the identified human induced soil degradation processes as well as the load-state relationships using photos, thematic maps, diagrams and textual explanations.
Entrepreneurs taking part in application:	Szent István University Helion Mérnöki Tanácsadó és Szolgáltató Ltd. National Food Chain Safety Office