The Monitoring Erosion of Agricultural Land and spatial database of erosion events

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In 2011 originated in The Czech Republic The Monitoring Erosion of Agricultural Land as joint project of State Land Office (SLO) and Research Institute for Soil and Water Conservation (RISWC). The aim of the project is collecting and record keeping information about erosion events on agricultural land and their evaluation. The main idea is a creation of a spatial database that will be source of data and information for evaluation and modeling erosion process, for proposal of preventive measures and measures to reduce negative impacts of erosion events.

A subject of monitoring is the manifestations of water erosion, wind erosion and slope deformation in which cause damaged agriculture land. A website, available on http://me.vumop.cz, is used as a tool for keeping and browsing information about monitored events. SLO employees carry out record keeping. RISWC is specialist institute in the Monitoring Erosion of Agricultural Land that performs keeping the spatial database, running the website, managing the record keeping of events, analysis the cause of origins events and statistical evaluations of keeping events and proposed measures.

Records are inserted into the database using the user interface of the website which has map server as a component. Website is based on database technology PostgreSQL with superstructure PostGIS and MapServer UMN. Each record is in the database spatial localized by a drawing and it contains description information about character of event (data, situation description etc.) then there are recorded information about land cover and about grown crops. A part of database is photodocumentation which is taken in field reconnaissance which is performed within two days after notify of event. Another part of database are information about precipitations from accessible precipitation gauges. Website allows to do simple spatial analysis as are area calculation, slope calculation, percentage representation of GAEC etc..

Database structure was designed on the base of needs analysis inputs to mathematical models. Mathematical models are used for detailed analysis of chosen erosion events which include soil analysis.

Till the end 2012 has had the database 135 events. The content of database still accrues and gives rise to the extensive source of data that is usable for testing mathematical models.