RESOLUTION FROM THE CONFERENCE OF
THE CZECH SOIL SCIENCE SOCIETY AND SLOVAK SOIL SCIENCE SOCIETY

"SOIL IN A MODERN INFORMATION SOCIETY"

held during August 20-23, 2007 in Roznov pod Radhostem
Recommendation for next steps in soil protection

Preamble

Soil as non-renewable natural source is more and more intensively subjected to degradation factors. This fact induces the deterioration of soil properties which in turn result in negative effects on the environment, human health and also the economy. According to this reason, the preparatory process of European Union dealing with Soil Framework Directive for Soil Protection (Communication of the Commission "Towards a Thematic Strategy on Soil Protection" (COM(2002)179)) is taken very positively. The main areas of the directive are:

- Risk area identification for main soil threats
- Soil contamination
- Programs of measures for soil restoration

The main topics and tasks of soil protection arising from the conference are:

- The problem of areal protection must be more effective reflected in newly developed documentation for regional planning, mainly for principles of regional development. The crucial points are to establish effective economical means to reduce soil sealing and for the realisation of soil remediation measures. The basic anticipation in this direction is the creation of a legislative action on the utilisation of brownfield sites for new capital construction with linked soil protection measures in urban and industrial zones.
- In terms of legislation, the means to control effectively the input of substances into soil that could cause a deterioration of physical, chemical and biological properties is critical. The control of the input of substances and the evaluation of the content of contaminants is possible to establish on the analysis of ecological and human risks by complying with soil properties heterogeneity. However, land managers must be allowed to maintain the hazardless application of substrates rich in organic matter (e.g. sludge from sewage plants, sediments, composts, biomass, etc.) on soil for the purposes of the return of organic matter into soil.
- To assure the continuation of the systematic monitoring of soil in forests, agricultural land and in protected areas, as an irreplaceable source of data to assess the status and development of soil resources.
- The generation of qualitative soil information to consider as necessary condition for effective soil protection by contemporaneous assurance of permanent access to this information for general non-professional, as well as also professional public.
- To increase the publishing activities of organisations relevant to soil protection, for the improvement of, and promotion of, the level of social and individual awareness in reference to soil.
- For better soil quality protection, it is necessary to interconnect more thoroughly the science and research sphere with the state administration. In this context, it is

necessary to create advisory bodies at departmental level for the resolution of questions of soil protection.

Proposals to support research in areas dealing with:

- The creation of digital information and knowledge systems with the permanent updating of their content, soil exploitation and protection, new methods to determine soil properties by remote sensing technologies.
- The creation of areal information for the multifunctional exploitation of soil, the detection and prediction of properties and quality of soil cover, including soil degradation, as well as the creation of information that is usable for the general evaluation of soil, proposals for the sustainable exploitation and effective protection of soil.
- The determination of the significance of soil and its exploitation in decreasing the volume of greenhouse gases in the atmosphere, as well as in carbon sequestration. Analyses, assessment, simulation of the development soil parameters over time and the creation of spatial information as basis for effective soil protection and hazards mitigation due to climate change.
- The exploitation of forest biomass with regard to the maintenance of biogeochemical cycles and the production potential of the site. The application of organic substrates on soil: benefits versus risks.
- The treatment of degradation effects on the nutrient content of forest soil that has been affected negatively by long-term acidification and the consequences of remedial measures and changes in cultivation practises.
- The water-regime and water holding capacity control in the landscape by utilisation of land regulation technologies (management of soil, crops and inputs).
- Effective control of erosion of soil under agricultural practices and forestry, particularly in mountainous areas.
- The control of anthropogenic influences on soil, mainly contamination and physical degradation. Answer to the ecological and human risks of the occurrence of contaminants in soil, their compounds in different conditions – hazards scenarios. Bioavailability as a key to the identification of contaminants risk in soil environment.