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### Analyzing and mapping soil parameters as indicator of soil quality

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An evaluation of soil quality in terms of its benefits to society is the basis for the formulation of land use strategies, especially for agriculture land, and regional development because soil can be included among capability factors for development. On the basis of existing spatial databases and maps of soil parameters relating to production, environmental parameters and soil threat, indices of agricultural soil quality in Slovakia were developed and their distribution shown on maps. The final integrated index of soil quality was created in the GIS environment by the intersection of the above-mentioned partial indices, while preserving an equivalence rule – that is, all rated parameters had the same weight.

The results show that in Slovakia 1.0% of agricultural soils are of very high quality, 30.3% are of high quality, 37.9% are of medium quality, 30.5% are of low quality and 0.3% is of very low quality. Most high-quality soils are in the lowlands and basins, which are mostly in the south of Slovakia. The result maps allow the identification of the partial indexes as well as the soil quality index for whole agricultural soil in Slovak Republic. The results are useful for agrarian landscape planning at specific sites as well as for the landscape structure management and optimization. The practical output from this result is the ability to obtain information about the quality of each agricultural soil in Slovakia.

#### Biography

Stefan Koco is the senior researcher in National Agricultural and Food Centre - Soil Science and Conservation Research Institute, Presov, Slovakia and Assistant Professor in University of Presov – Department of Geography and Applied Geoinformatics. He is the principal investigator of research works from the branch of soil erosion, soil organic carbon stock, soil science, soil conservation and ecology, geographic information systems and remote sensing. The results of his scientific work are presented in 5 books and brochures. He is an author and co-author of more than 70 original scientific papers. He is a member of Slovak Geographical Society (SGS).

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