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STATISTICAL APPROACH IN LAND-USE SUITABILITY ANALYSIS OF THE BELGRADE CITY SUBURBS

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The paper addresses the problem of suburb development potential in the City of Belgrade. Suburbanization problem is particularly pronounced due to the rapid spreading of the city, and there is a strong initiative for extending the existing Master Plan for these suburb areas. One of the important points in that context is determination of the Land-Use suitability, as one of the foremost planning references. Herein, a statistical model is proposed for modeling of the Land-Use suitability relying on the available thematic data, including the following sources: Land-Cover, Geological, Topographic and Protected areas maps and some synthetic maps derived from these sources in a GIS environment. For the modeling purposes, the Conditional Probability approach has been implemented, using Weight of Evidence technique, in particular. Two modeling schemes have been involved: (i) model is being built and correlated in the extents of the known Land-Use suitability (training area) (ii) model is being extrapolated to the areas with partly known Land-Use suitability (by having only two particular suitability classes at disposal). Such strategy enabled optimization of classification scale, crucial for the actual comparison of the actual state and the final model, as a combination of (i) and (ii). The results were convincing and by reaching more nearly 80% of accuracy, they parallel the results of the earlier work based on different methodology. Finally, a practical applicability of the model has been also discussed.

Key words: Land-Use suitability, GIS, City of Belgrade, Suburbanization, Conditional Probability

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