Classification of Landscape Sensitivity in the Territory of Cremona: Finalization of Indicators and Thematic Maps in GIS Environment

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ABSTRACT

Centrality of landscape, in territorial planning, has been influencing for years, the testing of innovative analytical techniques aimed to gather peculiarities of urban and suburban context. The advent of Spatial Information System created the possibility to produce more detailed studies analyzing a lot of information dealing with territorial phenomena of crucial importance in spatial planning. The development of analytical systems based on multidimensional analysis may represent the right way to synthesize different phenomena that interact locally, in order to obtain the intrinsic sensitivity of a specific landscape as a result. In the case of Cremona Urban Variant, the production of thematic maps has allowed the construction of six synthetic indicators, dealing with specific aspects of Cremona landscape. The indicators are: i) insularisation of non-built spaces, ii) morphological/structural values, iii) perceptual landscape aspects, iv) permanence of urban system, v) degree of imperativeness of environmental constraints, vi) integrity of land use.

Keywords: Data Mining, Geostatistics and Spatial Simulation, Spatial Data Analysis, Spatial Data Mining, Spatial Statistical Models, Urban Modeling

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1. KNOWLEDGE ORGANIZATION TO CARRY OUT THE ANALYSIS WITHIN A GEOGRAPHICAL INFORMATION SYSTEM ENVIRONMENT

1.1. Methodology and Operating Basis

In recent times the concept of landscape has been considered not only in the simple natural/environmental way. Both international and Italian national and regional laws have identified, over time, a number of complex factors to be considered for the identification of landscape structural elements.

According to such ideas, preliminary steps to achieve a landscape sensitivity map for Cremona, have been focused on:

1. Understanding the peculiarity of settlement and environmental contexts, analyzing planning documents at local and regional scale;
2. Collecting and preparing the corresponding GIS map layers.

After the formalization of knowledge kept, a methodological/procedural scheme has been developed for highlighting the symbiosis between spatial information used to build thematic indicators, and the subsequent production of homogeneous areas for events thematic characterization and entity (Figure 1).

1.2. Building Survey Statistical Units

During the preliminary operations of thematic indicators assessment, it turned out to be crucial to build survey units (Fabbris, 1997) to which connecting the information collected, depending on the subsequent treatment with dedicated GIS software and, later on, with geostatistical applications in AddaWin environment. Con-

**Figure 1. Methodological/procedural scheme**
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