

Chapter 7
Conclusion

7. Conclusion

In order to reach its first objective, a concept of sustainable environmental planning was formulated in this thesis. By means of this, sustainable environmental planning can be understood as a political, technical and administrative process addressed to establish the best options of land use of a territory in accordance with its physical, ecological and socioeconomic characteristics, all of them embedded into the principles of environmental sustainability. Additionally, the land-use plan generated as a fundamental product of the sustainable environmental planning plays a fundamental function in the process of environmental management due to its orientations about where, when, why, how and in what circumstances other instruments of environmental management could be carried out such as environmental impact assessment or environmental monitoring. It was also formulated that sustainable environmental planning must be considered as part of a general process of planning-implementation-monitoring-evaluation and adjustment and correction.

The general methodology to be employed in order to develop the process of sustainable environmental planning was also formulated, in the first part of this thesis. It is integrated by the phases of 1) Plan preparation, 2) Diagnosis, 3) Prospective, 4) Formulation of the plan, 5) Instrumentation and, 6) Execution and control, which need to be carried out by means of collaborative cooperation among authorities, technical staff and communities.

A second objective of the dissertation referred to the design of a spatial analysis model in order to support the diagnosis needed as part of the general methodology of sustainable environmental planning of rural areas. The designed model “Sustainable Environmental Planning of Rural Areas, SEpra” is based on recognizing of interactions between environmental factors and processes as a result of an inductive strategy of observation and environmental assessment. The assessment of environmental factors and processes is basically oriented towards identifying conditions of environmental stability-instability and landscape sensitivity.

By means of SEpra, several environmental components such as geology, geomorphology, hydrology, soil, climate, vegetation and land use are analyzed. These components, according to their characteristics and functions, were classified as factors and processes. For each of these components, different parameters and criteria of

evaluation were selected and included in the model. The successive process of decision making and integrated analysis generated the first five results, which were 1) Geostructural stability-instability, 2) Hydro-geomorphological stability-instability, 3) Erosion susceptibility, 4) Fragility of vegetation units and 5) Intensity of the land uses. Subsequently, these first results were combined in order to reach a second level of maps, such as 1) Physiographic restrictions, 2) Landscape sensitivity and 3) Landscape suitability. This last layer, which analyses the suitability of the land uses with respect to the landscape sensitivity, constitutes the basis for the guidelines of land-use zonation. The proposal of land-use zonation represents the final product of the SEBRA model.

According to the last objective of this thesis, the proposed spatial analysis model was applied and validated in two Venezuelan rural areas: Rivas Dávila municipality and Quíbor Valley. Both study areas constitute very important agriculture zones of Venezuela, in which the anthropogenic uses threaten the permanency of the natural resources in sustainable conditions. In this sense, the suitable land-use plan obtained by means of the SEBRA model could be a basic reference in order to build, with the active participation of social actors, a definitive land-use plan which guarantees its sustainable development.