

MICHAEL MAERKER (*), CARMEN PAZ CASTRO (**), SAMANTA PELACANI (*)
& MARIA VICTORIA SOTO BAEUERLE (**)

ASSESSMENT OF SOIL DEGRADATION SUSCEPTIBILITY IN THE CHACABUCO PROVINCE OF CENTRAL CHILE USING A MORPHOMETRY BASED RESPONSE UNITS APPROACH

ABSTRACT: MAERKER M., PAZ CASTRO C., PELACANI S. & SOTO BAEUERLE M.V., *Assessment of Soil Degradation Susceptibility in the Chacabuco Province of Central Chile using a Morphometry Based Response Units Approach*. (IT ISSN 1724-4757, 2007).

In this study the intensity and distribution of degradation processes in the Chacabuco Province of Chile was assessed focusing on water related degradation processes. The assessment is based on a morphometry based response units approach. Therefore a detailed DEM with 25 resolution was generated and analyzed. The combination of different indices allowed a separation of the terrain in different terrain units with specific degradation potential.

The information is further used to identify areas that are suitable for the deposition of heavy metal rich sewage sludge of the Santiago metropolitan area. The study shows that, with a detailed geomorphological description and terrain analysis, areas susceptible to degradation processes can be identified. Hence, in a further step a classification and regression tree approach was used to derive a model to predict the degradation susceptibilities in the Chacabuco Province. The analysis was calibrated with exiting information on the geomorphology as well as intensity and distribution of degradation processes in the Metropolitan Region of Santiago, Chile.

KEY WORDS: Terrain analysis, Geomorphology, Degradation processes, Central Valley Chile, CART.

(*) Dipartimento Scienze del Suolo e Nutrizione della Pianta, Università di Firenze, Piazzale delle Cascine 15, I-50144 Firenze. Corresponding author. E-mail: michael.maerker@unifi.it

(**) University Santiago de Chile, Department of Architecture and Urbanism, Chile.