



## **Assessment of desertification risk in semi-arid Mediterranean environments: the case study of Apulia region (Southern Italy)**

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This work focuses on the risk assessment of the areas threatened with desertification in the semi-arid Mediterranean environments. The presented approach uses as a reference the ESAs model (Environmental Sensitive Areas to Desertification; Kosmas et al., 1999) which is modified through a set of new indicators which take into account the region-specific environmental characteristics as well as identifiable parameters relevant for planning control measures. These supplementary indicators, comprehending socio-economic and environmental factors, are integrated in the ESAs model and, by using a GIS, applied to Apulia region (Southern Italy). This area represents a typical Mediterranean landscape affected by land degradation and desertification risks. The analyses include the elaboration of the whole set of indices on both the regional and the administrative scales which constitute the principal territorial units for the management of natural resources. The results have demonstrated that the introduction of the new indices has improved substantially the overall evaluation of the desertification risk in the Apulia region. The proposed approach permits not only the identification and refinement of different degrees of sensibility of an area to land degradation, but also the analyses of the factors affecting desertification and their evaluation in terms of spatial and temporal distribution. Moreover, the presented method is conceptually very simple and easy to implement from local to regional and national scale, and can be proposed as a methodology for the definition of priorities in adoption of strategies to mitigate desertification in the semi-arid Mediterranean environments.

**Key words:** desertification risk, sensitivity areas, Apulia region, Mediterranean environment.