

Assessment of the intrinsic vulnerability of agricultural land to water and nitrogen losses: case studies in Italy and Greece

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Abstract LOS indices (abbr. of Losses) can be used for the assessment of the intrinsic vulnerability of agricultural land to water and nitrogen losses through percolation and runoff. The indices were applied on the lowland region of Ferrara Province (FP) in Italy and the upland region of Sarigkiol Basin (SB) in Greece. The most vulnerable zones in FP were the coastal areas consisting of high permeability sandy dunes and the areas close to riverbanks and palaeochannels, and in SB were the areas characterized by high slopes and high permeability soils at high altitude and areas belonging to the upper part of the alluvial plain close to the boundaries between agricultural land and mountainous regions. The application of LOS indices highlighted the specific features of both lowland and upland regions that contribute to water and nitrogen losses and showed their ability for use as tools in designing environmental management plans.

Key words LOS indices; percolation; runoff; intrinsic vulnerability; nitrate