



## **Estimating land degradation by using satellite SPOT/VEGETATION NDVI time series**

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Remote sensing satellite data can be used as an effective tool in studying the dynamics of surface parameters since they acquire repeated measurements (at synoptic view) of the same area on a regular basis. In this study, the 1999-2002 SPOT-VGT Normalized Difference of Vegetation Index (NDVI) maps have been analyzed for some areas in the Southern Italy. The NDVI is an important parameter in the context of environmental monitoring. It is widely used because it is able to provide basic information useful for a large number of field applications, such as, land cover mapping, change detection monitoring, land degradation monitoring, burned-area mapping, etc.

In this work we discuss the feasibility of using Principal Component Analysis (PCA) along with in situ analysis and standard NDVI metrics for evaluating the vegetation inter-annual anomalies and variability. Both naturally vegetated areas (forest, shrubland, herbaceous cover) and agricultural lands have been investigated in order to extract the most prominent natural and/or man-induced alterations affecting vegetation behavior. Our findings suggest that PCA can provide valuable information for environmental management policies involving biodiversity preservation and rational exploitation of natural and agricultural resources.