**VEGETATION COVER AS AN INDICATOR FOR EFFECTIVE IMPLEMENTATION**

**OF LAND USE REGULATIONS AND LAND DEGRADATION RISK: A CASE STUDY IN SARDINIA**

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**ABSTRACT**

Land degradation is a worldwide issue which is often closely linked to human activity. In semi-arid environments common degradation processes are due to excessive soil losses, gully formation, surface sealing, and soil moisture depletion. Forest fire is increasingly an additional problem in the dry areas. In the present study, human interactions with land degradation are studied in a case study in Sardinia, Italy. Land degradation risk assessment was carried out using a desertification indicator method, the obtained result of which shows the prominent effect of vegetation cover. In the study area, high land degradation risk (and low vegetation cover) is found mostly in rainfed cultivation, overgrazed areas and those parts covered by olive groves or vineyards. Various strategies have been implemented, both deliberately and as a result of circumstantial effects, to alter vegetation cover over time. In the analysis, time series Normalized Difference Vegetation Index (NDVI) data was used for the period 1972 to 2009. Results show that not all human interactions with the environment are necessarily negative. The improvement of vegetation cover on the island is mainly due to good implementation of land use regulations. Three main factors seem to be responsible for the increase in vegetation cover: (1) government implementation policy on land use, with regards to fire practice (implemented as traditional practice by the local farmers since long time) and establishment of natural parks and protected areas; (2) reforestation in the over-grazed area; (3) the migration of the youngest generation of the population from the country side to the urban areas in search of jobs and other opportunities, which allow the agricultural areas to be recolonized by the natural vegetation. The study demonstrates that vegetation cover on the island is improving as compared to the past, decreasing the land degradation risk even though the region is coping with climate change.

**Keywords:** land degradation, time series NDVI analysis, land use policy, natural parks

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