



Changes in the agricultural land and soil consumption in the industrial area of Portovesme (south-western Sardinia, Italy)

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Industrial settlements may reduce agricultural land, causing their complete abandonment and compromising soil quality and the possibility of recovering the ancient agricultural vocation. Hence, there is the need to identify and evaluate the extent of the phenomenon so that new redevelopment and rural development processes can be envisaged.

This study was carried out in the industrial area of Portovesme (specialized in metallurgy and thermoelectric energy production), inside a reclamation site of national interest. The investigation was carried out accessing bibliographic and cartographic documents from various times and by GIS techniques, photointerpretation, and field checks. This methodological approach has allowed us to outline the process of expansion of the industrial area and the consequent fragmentation of the rural area. The activity was divided into two phases: 1. Analysis and delimitation of pre-industrial and current agricultural uses, through photointerpretation (orthophotos of 1954, 1968 and 2016) and the use of information layers (Corine Land Cover, years 2003 and 2008, 1:25,000 scale) in the zones close to the industrial area. The current land use was validated through direct field observations; 2. Comparison between the pre-industrial and the current times in a GIS environment.

Comparison between the two time periods showed a shrinkage of agricultural land of 42%. Three types of rural areas were identified: consumed (currently occupied by industrial and other anthropic infrastructures), traditional (for current agricultural uses) and abandoned (former agricultural land that was abandoned and is currently unproductive), respectively equal to 28%, 50% and 22% of the pre-industrial agricultural land.

The study represents a necessary knowledge on the changes of the agricultural land in quantitative terms, which will make it possible to direct subsequent investigations on the possibility of implementing a conversion to rural uses in the industrial areas.

Keywords: Land Use Changes|Soil Consumption|Industrial Activity|Agricultural Land|Rural Development