



## Soil erosion in a man-made landscape: the Mediterranean

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Mediterranean-type ecosystems are characterised by a seasonally contrasted distribution of precipitation, by the coincidence of the driest and hottest season in summer, by an often-mountainous terrain, and by a long history of intense human occupation, especially around the Mediterranean Sea. The history of the Mediterranean lands is the history of human impacts on the soil system, and soil erosion is the most intense and widespread impact on this land where high intensity and uneven rainfall is found.

A review of the soil erosion rates measured in the Mediterranean basin will be shown. The measurements done by means of erosion pins, topographical measurements, rainfall simulators, Gerlach collectors in open or close plots, watershed/basin measurements, reservoirs siltation and historical data will be shown. A review of the soil erosion models applied in the Mediterranean will be shown.

The tentative approach done until October 2011 show that the soil erosion rates on Mediterranean type ecosystems are not as high as was supposed by the pioneers in the 70's. And this is probably due to the fact that the soils are very shallow and sediments are not available after millennia of high erosion rates. This is related to the large amount of rock fragments are covering the soil, and the rock outcrops that are found in the upper slope trams and the summits. Soil erosion in the Mediterranean is seasonal due to the rainfall concentration in winter, and highly variable within years as the high intensity rainfall events control the sediment production.

Natural vegetation is adapted to the Mediterranean environmental conditions, and they are efficient to control the soil losses. An example are the forest fire that increase the soil losses but this is a temporal change as after 2-4 years the soil erosion rates are similar to the pre-fire period. Agriculture lands are the source of sediments although the highest erosion rates are found in badland areas that cover a small part of the Mediterranean lands.

The methods applied to measure or estimate the soil erosion should be improved to make them comparable. An agreement is necessary to decide the size of the plots, the material and equipment to be used and the future research topics.

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