



Diagnosis of soil desertification: use of chemical and physico-chemical parameters

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The early detection and possible remediation of desertification processes is a main concern in the Mediterranean Basin. This is the case of the Region of Murcia (SE Spain) that has had an important agricultural activity for centuries. The climate as well as the characteristics of the soils are excellent for cultivation but, for several reasons, desertification processes have occurred.

This work is focused to extend the field of studies on desertification to factors like those indicative of chemical degradation of soils which could be used as indicators of the desertification status. The areas selected for such study correspond to four groups: lands with drip irrigation, blanket irrigation, unirrigated land and areas with natural non-anthropised vegetation. Aridity indexes, mineralogy, soil uses, pH, electrical conductivity, trace metals and phytotoxic metals are considered as possible parameters for diagnosing the degradation status.

The following indicators have been defined: salinisation, alkalinisation, loss of fertility: loss of micronutrients, iron, copper, manganese and zinc and risk of phytotoxicity: increase of trace lead and cadmium. These indicators have been applied to the studied areas according to the basic data available. Geographical Information System (GIS) methodology is used for monitoring the evolution of the processes.