



Geochemical composition of water and suspended river sediments: a tool for the environmental analysis of a hydrographic basin.

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The preliminary results aimed to defining the environmental conditions of the hydrographic basin and based on geochemical and hydrological methods are presented. The discussed case study is represented by the Reno river, northern Italy, where its environmental conditions are initially determined with a geochemical analysis of the solid suspended material and of the water in 8 monitoring stations. Additionally, a geochemical monitoring has been carried out for two of the major hydrographic sub-basins: a) Lavino river, with areal extension of 82,6 km² and mean annual discharge of 0.62 m³/s (period 1998-2004) and b) Savena river, with areal extension of 168,9 km² and mean annual discharge of 2.8 m³/s (period 2000-2004). In particular, the chemical analysis of the collected solid material by means of an X-rays method and of the waters by means of ICP-MS standard procedures allowed to define i) the principal mean concentrations of both water and sediments and their comparison with the Italian and European legislative limits; ii) the variations in ionic concentration of both sediments and water, therefore enabling to infer the degree of erodibility of the rocks outcropping within the hydrographic basins, their relation with the amount of precipitation and corrvation times of the water at the monitoring sections.