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Two dimensions of nitrate pollution management in an agricultural catchment

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The Kocinka River catchment underlain by the karstic-fissured upper Jurrasic Częstochowa aquifer in Southern Poland is the site of an interdisciplinary research aimed at finding solutions to pollution of water resources with nutrients. These efforts are conducted in the framework of the BONUS Soils2Sea project that deals with the development of differentiated environmental management measures based on utilization of the natural ability of soils, groundwater and surface water to remove surplus nutrients. Implementation of these or any other measures for the improvement of water quality depends primarily on the perceptions and attitudes of the major actors, which in turn are a product of the socio-economic, cultural-historical and political development spanning many generations. The problem of the deteriorating water quality is therefore twofold. Understanding the complex natural system consisting of the coupled groundwater and surface water component with a wide spectrum of time lags of pollution transport is only the beginning of the solution. The mitigation policies and measures based on this scientific knowledge have to recognize the equally complex nature of social factors and interactions. Implementation of the European and national policies and legislations has to take into account the regional perspective. Identification of the key stakeholders is in this regard a first step followed by an inquiry into their values, perceptions and motivations through interviews, workshops, etc. Understanding of the socio-cultural, historical, economic and political factors that shape stakeholder actions is a prerequisite for the development of the successful management and mitigation schemes.
The process of gaining insights into the environmental and social aspects of nutrient pollution in the Kocinka catchment is partly presented by the documentary film "Soils2Sea: Reducing nutrient loadings into the Baltic Sea" (https://www.youtube.com/watch?v=LUouES4SeJk).