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Legal constraints for the assessment of spatially contaminated soil or groundwater in urban areas

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In many cities (in Germany), as well as in the rural vicinity areas exist with so called "spatially increased pollutant" (SIP) concentrations. These SIP areas typically show soil pollution from heavy metals (HM) or persistent organic pollutants (POP) originating from e.g. historical ore mining or settlements (input of pollutants from dumping, burnings, etc.). Geogenic caused HM concentrations can pollute even larger areas, due to specific geological formations. SIP areas (as defined by the German Soil Protection Law, Bundes-Bodenschutzgesetz) are handled different by law compared to contaminations due to discrete point sources. This contribution wants to give an overview for geoscientists, for public administration and consulting companies, over how many legislative areas (i.e. laws concerning soil and water protection, waste disposal, environmental planning, food and animal feed) have to be considered to guarantee an effective remediation measure or land recycling, when dealing with SIP areas. From the legislative point of view a contamination of soil is called "spatial", when this contamination is typical for a large area, and is not due to a utilization, such as petrol stations or junk yards. Usually, a large area exceeds 1 km2, the term "increased concentration" is defined and it is distinguished between a defined geogenetic and anthropogenic contamination, as well. "Settlement caused contamination" is defined e.g. as diffuse input caused by various human actions over a long time period. Thus, SIP areas consist of e.g. industrial areas and allotments, as well as agricultural areas. Small scale soil contaminations are usually remediated, if there is a defined risk e.g. for human or animal health. Since "classical" remediation measures are often not applicable for SIP areas for reasons of proportionality, it is possible by law to apply other solutions, such as safeguarding or specific definition of use. A new remediation approach for SIP areas

can be the so called "integrative remediation plan" (IRP). Analogical to e.g. "integrative groundwater investigations" an IRP considers complex contamination scenarios (large scale, many different owners, many sources, etc.) and interdisciplinary solutions. This approach comprises to avoid single remediation measures of small areas within large-scale contaminated urban areas ("white patch in a grey carpet"), but introduces as far as possible land recycling methods of large areas. An early consideration of all relevant legislative areas is recommended for effective land recycling measures in urban areas. At the moment a new guideline for the integrative legislative approach for SIP areas is developed in cooperation with the Environmental State Ministry of the Federal State Baden-Württemberg, Germany. This guideline will help to consider the various regulations in SIP areas, especially for geoscientists working on the interface between technical and legislative demands.