

30 Years Soil Screening Values in Europe: where have we got to?

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As a response to the discovery of the first series of contaminated sites in the late 1970s, the first Soil Screening Values (SSVs) were derived in the early 1980s. Characteristic of the first generation of SSVs was the lack of scientific underpinning and the straightforward use of the SSVs: often remediation was triggered when in one or more soil samples the SSVs were exceeded. A major breakthrough was the derivation of risk-based SSVs in the 1990s. At the same time soil quality assessment frameworks were developed, in which exceedance of SSVs often triggered more detailed risk assessments instead of remediations. In the period 1994 to today several European countries developed risk-based SSVs.

Since 1996 there was an intensive communication within the Member states of the European Union (16 countries at that time), with an important role for the CARACAS, CLARINET and NICOLE networks. As a consequence, the SSVs used in different countries share common principles. At the same time, independent scientific development of risk assessment tools took place in many European countries, which resulted in a large number of different risk assessment tools in Europe for the same purpose. SSVs in European countries must differ for at least three reasons: differences in geography and climate, cultural differences and, last but not least, differences in policy decisions. However, SSVs in Europe also differs

because of technical differences among the many available risk assessment tools.

A comparison between the SSVs of 16 European countries shows that all these countries use human health as protection target. Moreover, five other countries consider ecological protection, six countries consider groundwater and two countries surface water as protection targets. For metals the difference between the highest and the lowest SSVs often is between 10 and 100, but seldom higher than 100. For organic compounds the difference between the highest and the lowest SSVs is often between 100 and 1000 and for some compounds higher than 10.000.

Differences between SSVs among countries due to differences in the risk assessment tools should be avoided. Therefore, the HERACLES network made a plea for a higher level of consistency in risk assessment tools among European countries. The Soil Framework Directive, still not implemented, would be a driver for further harmonization. Countries that plan to release SSVs must be careful with simply adopting SSVs from other countries. Instead these countries are advised to either adapt existing frameworks for the derivation of SSVs to appropriate geographical and cultural conditions and policy decisions, or to base SSVs on existing SSVs of countries with similar geographical and cultural conditions and include their own policy decisions.

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