

# Soil Vulnerability Maps as Tools for Sustainable Soil Management

M. de Bakker

J.E. van Deijnen

Van Hall Institute and IWACO,  
The Netherlands

## 1. Abstract

Due to new legislation (effective January 1995) a change in policy and practice with regard to soil sanitation is being implemented in The Netherlands. In the eighties and early nineties soil sanitation strictly was aimed at restoring the possibility of multipurpose use of the land. High cost and administrative restrictions caused by interfering regulations resulted in an inefficient and stagnating soil sanitation process. Reconsideration of the needs and (financial) potentials of society, and the (health, ecological and environmental) risks resulted in the proposal of a more flexible approach to soil sanitation, well integrated with urban and rural development planning.

The principle of this flexible and integrated approach, named "Active Soil Management" (ASM; Dutch: Actief Bodembeheer, ABB) is: to maintain an adequate and sustainable soil quality in tune with the present or intended (if permitted) land use. The management of a multitude of data sets (a.o. soil and groundwater analyses, decommissioned industrial sites and other potentially polluted locations, back-ground values of contaminants) and information sets (soil map, soil vulnerability map, policy decision maps etc. etc.) in relation to the more selective and, to a certain extent, "policy liable" criteria applied in ASM make it necessary to develop adequate tools. Preferably, these tools are incorporated in a Soil Information System which is linked to a Geographical Information System.

Commissioned by the government of the province of Groningen (The Netherlands), IWACO, an environmental engineering firm, started a survey in 1994 to assess the number of decommissioned industrial sites. Initially developed as (part of a) ranking tool, the soil vulnerability map also is of use in ASM as one of the derived soil datasets to be used for soil policies (e.g. development schemes, changes in land use, sewage systems in the rural areas). The Van Hall Institute (a polytechnic with an environmental sciences department) was asked to review the methodology. This resulted in a second improved version, which is currently being evaluated. Especially differences and similarities in scale and information density between provincial and municipal level are discussed.

Well-established soil vulnerability maps can be efficient tools in the ongoing search for a sustainable use of the land.

The paper reports the results of the review and the characteristics of the second, improved version.