Soil-polluting activities from localised sources

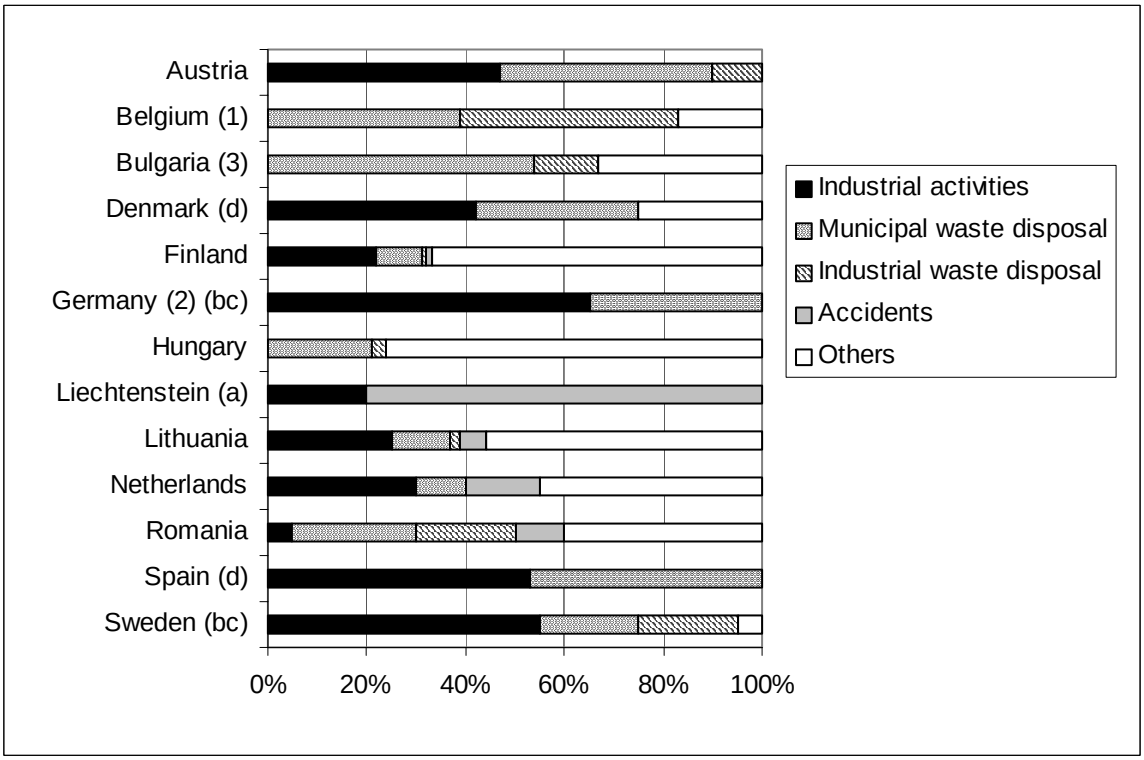


Figure 1: Soil-polluting activities from localised sources as a percentage of total

Sources: For EU countries and Liechtenstein, data update request, August 1999; for accession countries, data request to new EEA member countries, February 2002.

([1]) Belgium: data refer to Flanders.
([2]) Germany: 'Industrial activities' also include 'Accidents' and 'Other'; 'Municipal waste disposal' also includes 'Industrial waste disposal'.
([3]) Bulgaria: 'Others' includes storage of pesticides, contaminated soils by mining and industrial activities.

NB:
(b) Minor accidents are not included.
(c) The percentage share refers to the total number of identified, suspected sites.
(d) Data refer exclusively to abandoned sites (not in operation).
(e) Municipal waste disposal also includes industrial waste disposal.

☹ Key message

Across Europe, several activities causing soil pollution can be clearly identified. These are related in particular to waste disposal from municipal and industrial sources and losses during industrial activities. However, the range of polluting activities varies considerably in each country. These variations may show different classification systems or incomplete information available.

In the future, implementation of the legislative and regulatory frameworks in place (landfill directive, integrated pollution prevention and control directive, water framework directive) should result in fewer inputs of contaminants into soil that might give rise to severe contamination and in a better control of contamination caused by natural or other events. As a consequence, most of the efforts will be focused on historical contamination.

Results and assessment (level of the indicator)

Relevance of the indicator for describing developments in the environment

The indicator provides information on the 'pressure' element of the DPSIR assessment framework.

The more the input of hazardous substances in the soil is controlled, the more the environmental stress for soil and groundwater is reduced. This is achieved through the improvement of environmental standards for industrial sites in terms of new contamination and in relation to, for example, the handling of hazardous substances (IPPC directive, landfill directive, groundwater directive) and, additionally, through the remediation of historic contamination.

The indicator is suitable to show the broad range of hazardous substances causing soil contamination from localised sources.

Policy relevance and policy references

Several measures for the prevention of soil contamination from localised sources are in place. These are a consequence of the improvement of industrial production processes (prevention of accidents, safety measures), higher technical standards for waste-disposal facilities and implementation of legal directives.

Legal measures are taken both at the national level (e.g. Austrian Industrial Code — closing down of facilities in the event of risks to human health; ordinance on chlorinated hydrocarbons (CHC) in industrial installations — regular surveys of CHC facilities are compulsory) and at the European level (IPPC directive, landfill directive).

Sources:

- IPPC directive/EPER, 'Integrated pollution and prevention control' (1996).
- Council directive on the landfill of waste (1999).

Assessment

Local soil contamination is mainly due to municipal and industrial waste disposals, losses during industrial activities and accidents in most of the countries analysed.

Numerous activities have been dated in the past — however current activities still cause significant impacts to soil.

No information is provided concerning relevant pollutants. However, a broad range of industrial and commercial branches release(d) impacts into soil covering a broad variety of different pollutants. Changes in the scope of soil-polluting activities reflect remedial measures to manage historic contamination on the one hand and pollution prevention measures at active facilities on the other.

Data

Table 1: Soil-polluting activities from localised sources as a percentage of total

Sources: For EU countries and Liechtenstein, data update request, August 1999; for accession countries, data request new EEA member countries, February 2002.

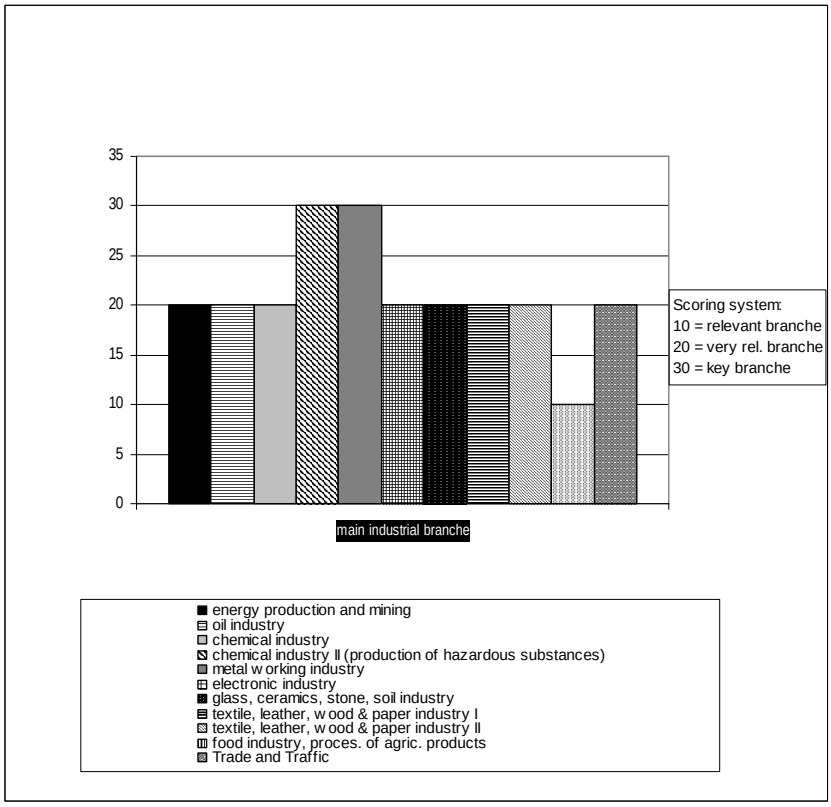
	Industrial activities	Municipal waste disposal	Industrial waste disposal	Accidents	Others	Notes	Comments
Austria	47	43	10				
Belgium		39	44		17	([1])	
Bulgaria		54	13		33		
Denmark	42	33			25	(d)	
Finland	22	9	1	1	67		
Germany	65	35				([2]) (b, c)	
Hungary		21	2.8		76.2		
Liechtenstein	20			80		(a)	
Lithuania	25	12	2	5	56		
Netherlands	30	10		15	45		
Romania	5	25	20	10	40		
Spain	53	47				(d)	
Sweden	55	20	20		5	(b, c)	

([1]) Belgium: data refer to Flanders.
([2]) Germany: 'Industrial activities' also include 'Accident' and 'Other'; 'Municipal waste disposal' also includes 'Industrial waste disposal' (no distinction between these two categories).
(a) Minor accidents are not included.
(b) The percentage share refers to the total number of identified, suspected sites.
(c) All figures refer exclusively to abandoned sites (not in operation).
(d) Municipal waste disposal also includes industrial waste disposal.

Selected priority industrial sectors causing soil contamination from localised sources

More detailed data are available from a data collection carried out in test regions (autumn 1999). The assessment of relevance to soil and groundwater contamination of 41 industrial activities is based on expert judgment. The results have been summarised by main industrial branches. Data are available for nine test regions located in nine countries (AT, BE, DK, DE, NL, ES, CH, IT and NO).
Scoring system:
— Priority 1: very important for contaminated sites management (30 points)
— Priority 2: important for contaminated sites management (20 points)
— Priority 3: not very important for contaminated sites management (10 points)
— Not included in the national system (– 10 points)

Figure 2: Estimated main industrial branches causing soil contamination from localised sources in selected European regions



NB: Assessment of relevance to soil and groundwater contamination of 41 industrial activities based on expert judgment. Average scores deriving from nine test regions, scoring system: 30 = very relevant; – 10 = currently not regarded or included.

Source: Second technical workshop on contaminated sites (Dublin, November 1999).

The results show that soil-polluting activities in the regions analysed are similar in terms of polluting sources and their estimated importance. The metal working industry and the chemical industry (production of hazardous substances) are, on average, considered as key branches for the management of contaminated sites (causing soil contamination).

Meta-data

Technical information

1. Data source

National data were obtained from a data update request, August 1999, for EU countries and Liechtenstein; and from a data request to new EEA member countries, February 2002, for accession countries. Data were used for the preparation of the report *Environmental issues* No 16 'Down to earth: soil degradation and sustainable development in Europe' (December 2000) and for the report *Environmental assessment* No 8 'Environmental signals 2001', May 2001.
Data on breakdown of industrial branches were obtained from the EEA-ETC/S test data collection (November 1999).

2. Description of data

Soil-polluting activities: data delivered by countries were expressed in percentages.

Relevant industrial branches: data were collected for 41 industrial activities (nine major groups) based on expert judgment.

3. Geographical coverage

Selected European countries and regions.

4. Temporal coverage

No time series are available. Data show current status.

5. Methodology and frequency of data collection

A request to countries was defined by the ETC/S in view of measuring current and future progress of contaminated sites management.

6. Methodology of data manipulation

N.a.

Qualitative information

7. Strength and weakness (at data level)

The EEA Workshop on Indicators for Soil Contamination held in Vienna, in January 2001, stated that this indicator (soil-polluting activities from localised sources) is perceived as relevant by countries.

In the countries analysed, there is a broad conformity about the main causes of soil-polluting activities. A direct quantification of hazardous substances input into soil is almost impossible.

For the identification of soil-polluting activities, there is a need to analyse a more detailed breakdown of industrial branches, including information on the size and type of facilities, kind of hazardous substances treated, etc.

8. Reliability, accuracy, robustness, uncertainty (at data level)

Presently, data are highly dependent on estimates of local soil contamination sources. In the long run, more information will be available on types and sources of pollutants penetrated into the soil, as more investigations are carried out.

9. Further work required (for data level and indicator level)

Data collection and analysis at national level. Better specification of data. Focus on relevant industrial branches for future data collection. Definition of key pollutants for the various industrial activities. Further development and testing of indicators at regional level (test areas).