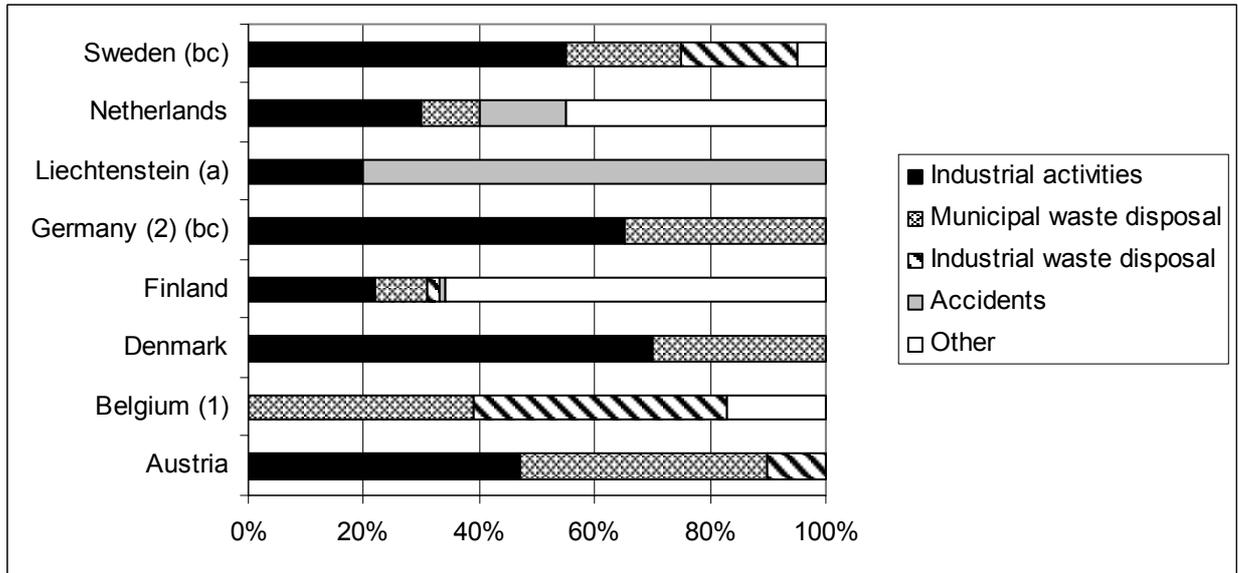


**Indicator Fact Sheet Signals 2001 – Soil**

**YIR01SO01 Soil polluting activities from localised sources**



**Fig. 1 Soil polluting activities from localised sources as % of total**

Source: EEA-ETC/S Data update request (August 1999, updated January 2001)

- Notes:
- (1) Belgium: data refer to Flanders
  - (2) Germany: 'Industrial Activities' also include 'Accidents' and 'Other'; 'Municipal Waste Disposal' also includes 'Industrial Waste Disposal'
  - (a) minor accidents are not included
  - (b) the percentage share refers to the total number of identified, suspected sites
  - (c) data refer exclusively to abandoned sites (not in operation)

⊗ No quantitative information is yet available about the scale and severity of contamination from activities such as waste disposal, industry and accidents in the EU that could pose risks to soil and groundwater.

There are several activities in the EU that result in soil pollution. Their range varies widely from country to country but some of these variations may result from different classification systems or incomplete information.

Implementation of the Landfill Directive and the Integrated Pollution and Control Directive should result in fewer inputs that might give rise to severe contamination and better control of contamination from natural or other events. It should, therefore, be possible to focus efforts on historical contamination.

**Results and assessment**

Relevance of the indicator for describing developments in the environment

The indicator shows the broad range of activities in the EU that involve the use of hazardous substances and that can give rise to soil contamination from localised sources.

Measures that result in better control of these activities and hence of the inputs of hazardous substances into the soil should reduce the environmental stresses on soil and groundwater.

Policy relevance and policy references

Several measures for the prevention of soil contamination from localised sources are in place, such as improvements of industrial production processes (prevention of accidents, safety measures) and better waste disposal. Measures are being implemented at the European level (following the 1996 IPPC Directive and the 1999 Landfill Directive) and the national level. For example the Austrian Industrial Code can require facilities to close down if there are risks to human health and provides for compulsory regular surveys of chlorinated hydrocarbons in industrial installations.

Assessment

In most of the countries analysed, local soil contamination is due mainly to municipal waste disposals and industrial activities no longer in operation, and to past accidents. In some cases, the scale or even the existence of a contamination problem is only established as a result of a new construction project (Stade de France, Millennium Dome, UK), or following an accident (dam failure at Donana Park, Spain) or a natural event (flooding of La Loire, France).

Problems of local contamination are closely connected with the methods of waste disposal used during the past 20 to 30 years - huge amounts of more and more hazardous waste were deposited without adequate precautions for the protection of the environment - and increasing use of hazardous substances at industrial and commercial locations. This has led to soil and groundwater contamination due to handling losses, defects, industrial accidents and leaching of hazardous substances at waste disposal sites.

A wide spectrum of contaminants is expected as a result of the broad range of industrial and commercial activities that can give rise to soil contamination. Major pollutants include organic contaminants such as chlorinated hydrocarbons, mineral oil, heavy metals and, in some parts of Europe, artificial radionuclides. It has not yet been possible to make a quantitative assessment.

The types of industrial activity (either historical or currently in operation) that pose a risk to soils and groundwater, and the spectrum of the various polluting activities, vary between countries. These variations may result in different classification systems and in incomplete information being available in some countries.

Implementation of the legislative and regulatory frameworks in place (Landfill Directive, Integrated Pollution and Prevention Control Directive) should result in fewer inputs into soil of substances which might give rise to severe contamination and in a better control of contamination resulting from handling losses and accidents at industrial sites. As a consequence, most future actions should be able to focus more on historical problems.

**Data**

**Table 1 Soil polluting activities from localised sources as % of total**

Source: EEA-ETC/S Data update request (August 1999, updated January 2001)

	Industrial activities	Municipal waste disposal	Industrial waste disposal	Accidents	Other	Notes	Comments
Austria	47	43	10				
Belgium		39	44		17	(1)	
Denmark	70	30					(1)
Finland	22	9	2	1	66		
Germany	65	35				(2) b c	
Liechtenstein	20			80		a	

Netherlands	30	10		15	45	
Sweden	55	20	20		5	b c

updated on 31 January 01

(\*) new data according to Vibeke Ernesten, GEUS (1999)

(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 2 categories)

(a) minor accidents are not included

(b) the percentage share refers to the total number of identified, suspected sites

(c) all figures refer to exclusively to abandoned sites (not in operation)

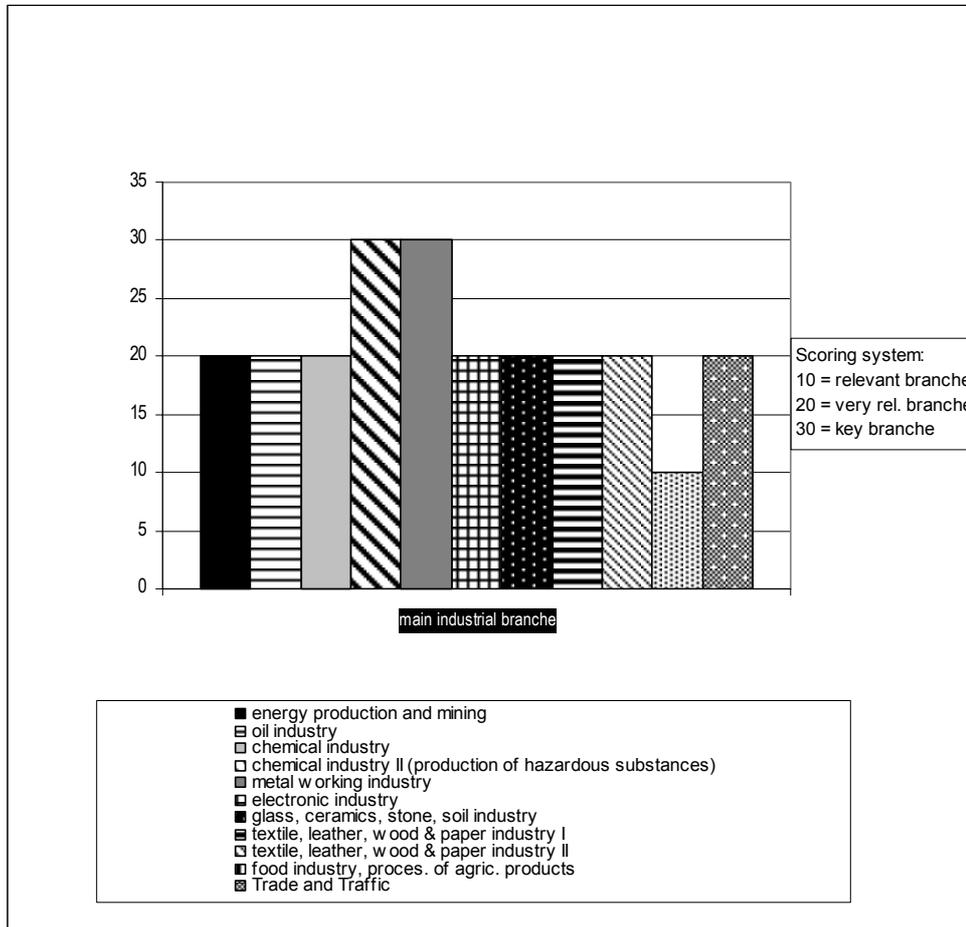
### Selected priority industrial sectors causing soil contamination from localised sources

More detailed data are available from a data collection carried out in test regions (Autumn 1999). The assessment of the relevance to soil and groundwater contamination of 41 industrial activities is based on expert judgement. The results are 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)

**Fig. 2 Estimated main industrial branches causing soil contamination from localised sources in selected European regions**



Note: Assessment of relevance to soil and groundwater contamination of 41 industrial activities based on expert judgement. Average scores deriving from 9 test regions, scoring system: 30 = very relevant; -10 = currently not regarded or included .

Source: Source: EEA-ETC/S Proceedings and results of the 2nd Contaminated Sites Workshop (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 have been obtained from EEA-ETC/S: Data update request (August 1999, updated January 2001). Data have been used for the preparation of the report Environmental issues nr. 16 "Down to earth: soil degradation and sustainable development in Europe" (December 2000).

Data on breakdown of industrial branches were obtained from EEA-ETC/S test data collection (November 1999). Data have been included in the proceedings of the 2<sup>nd</sup> workshop on contaminated sites (Dublin, Nov. 1999).

#### *2. Description of data*

Soil polluting activities: original data were expressed in terms of percentages.

Relevant industrial branches: data were collected for 41 industrial activities (9 major groups) based on expert judgement.

#### *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 ETC/S in view of measuring current and future progress of contaminated sites management.

#### *6. Methodology of data manipulation*

### Quality information

#### *7. Strength and weakness (at data level)*

In the countries analysed, there is broad agreement 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, and kind of hazardous substances treated.

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

The data are highly dependent on estimates of sources of local soil contamination. In the long run, as more investigations are carried out, more information will become available on types and sources of pollutants that enter the soil.

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).