Soil Remediation market in Europe

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Contaminated soil as a global concern

Soil contamination is <u>persistent</u>

Environmental liabilities with:

- Risks for human health
- Threat to groundwater resources

European Commission :

- 2006: (est.) 3.5 million potentially contaminated sites in EU-25

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Contaminated soil as a global concern (2)

- The largest and most affected areas are currently located in North-Western Europe
- A number of industries were more prone to create soil pollution:

Problem owners


Oil


Gas


Mining


Power


Chemical


Steel

- Sources of contamination from public activities are important as well (e.g. military)
- The public sector has also taken over liabilities in case the polluter can no longer be held accountable

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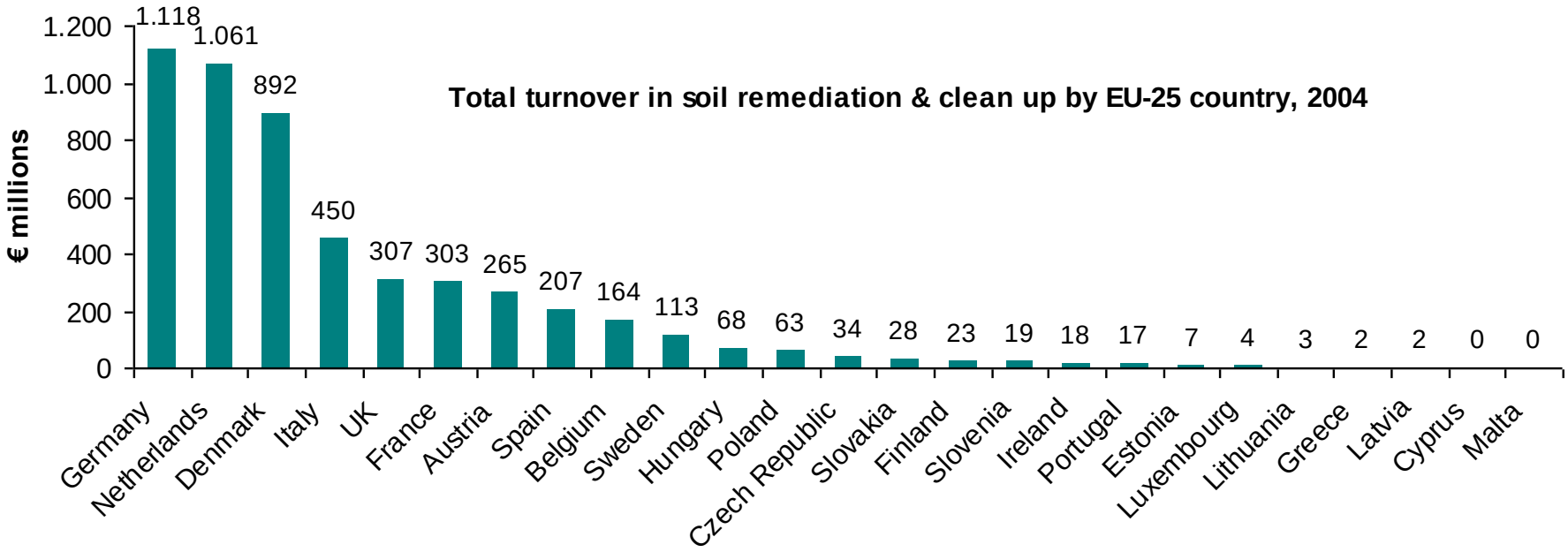
Size soil remediation market

- EU-25 in 2004:
  - **5.2 billion EUR**
  - **double-digit** growth rates over the last years
  - big regional differences (especially visible per capita)



Source: Ernst & Young, 2006, Study on Eco-industry, its size, employment, perspectives and barriers to growth in an enlarged EU

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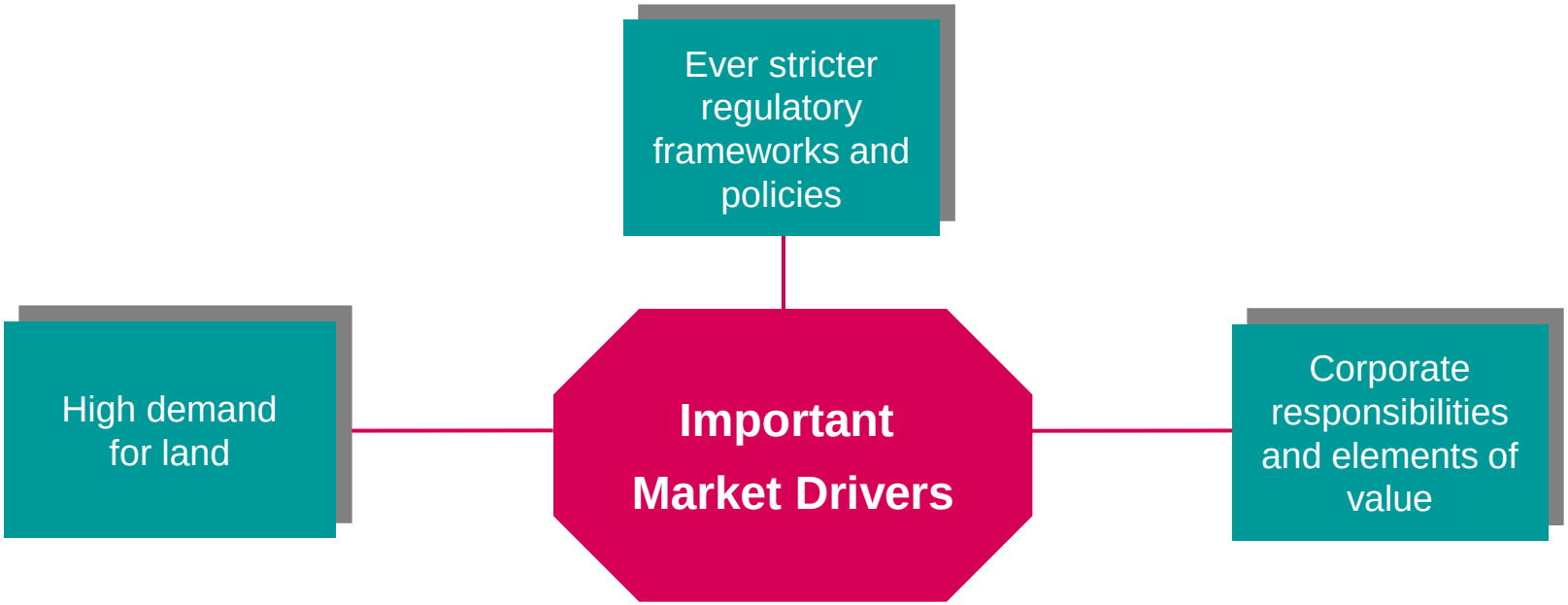
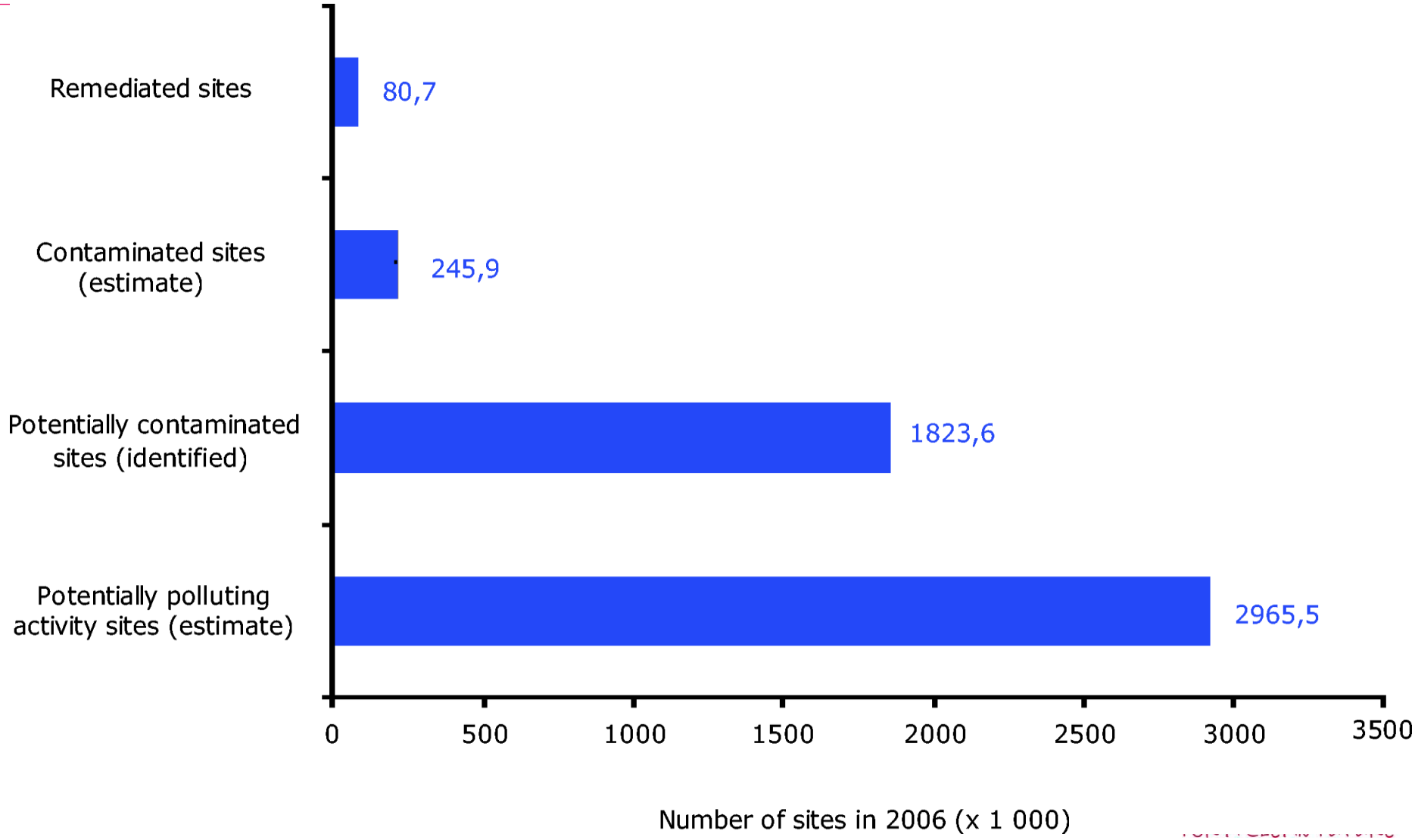
Perspective of further market growth



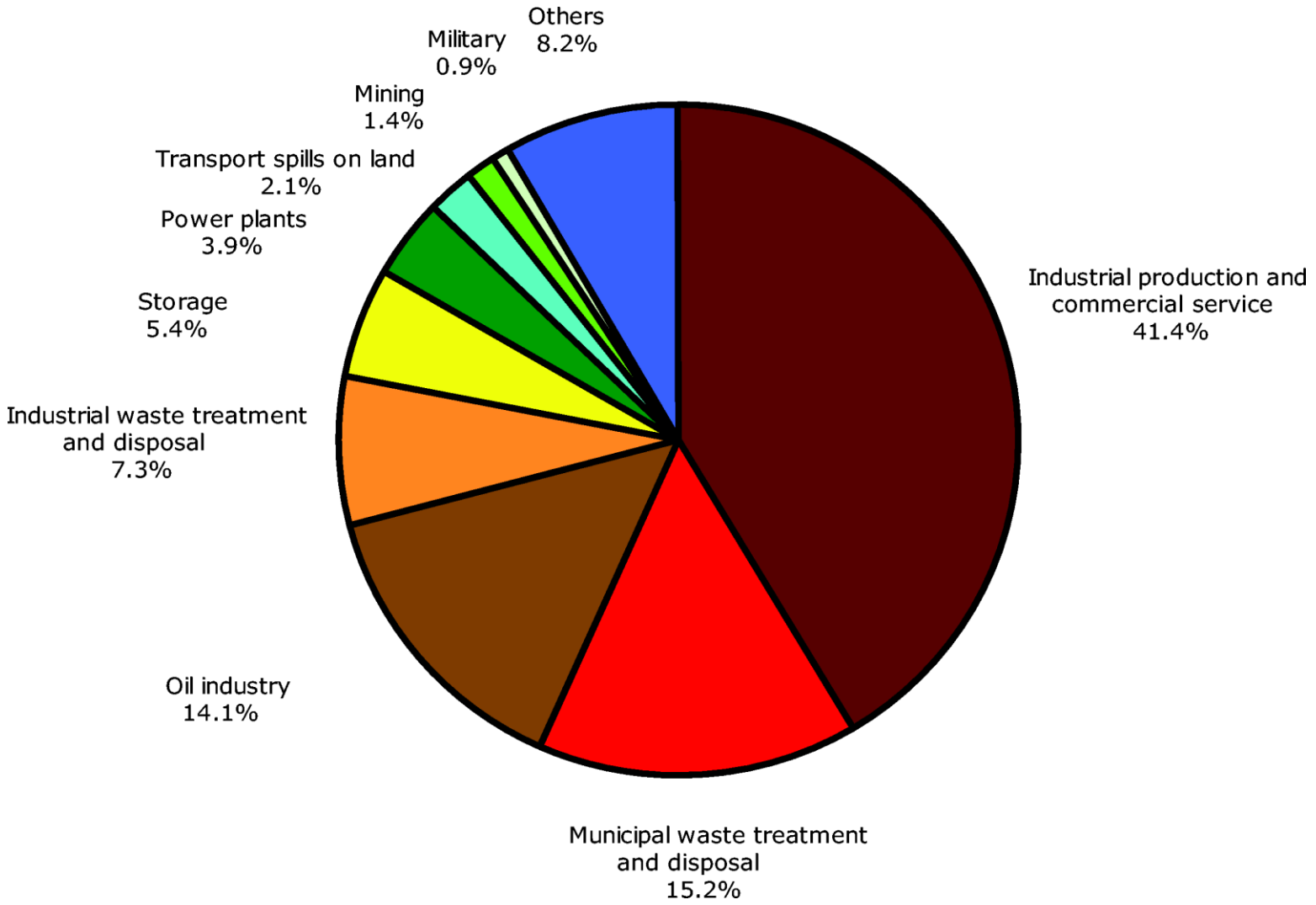
Public Awareness that soil contamination is an issue to be dealt with

Illustrative : specific initiatives by International Institutions

Number of sites



Activities causing soil pollution



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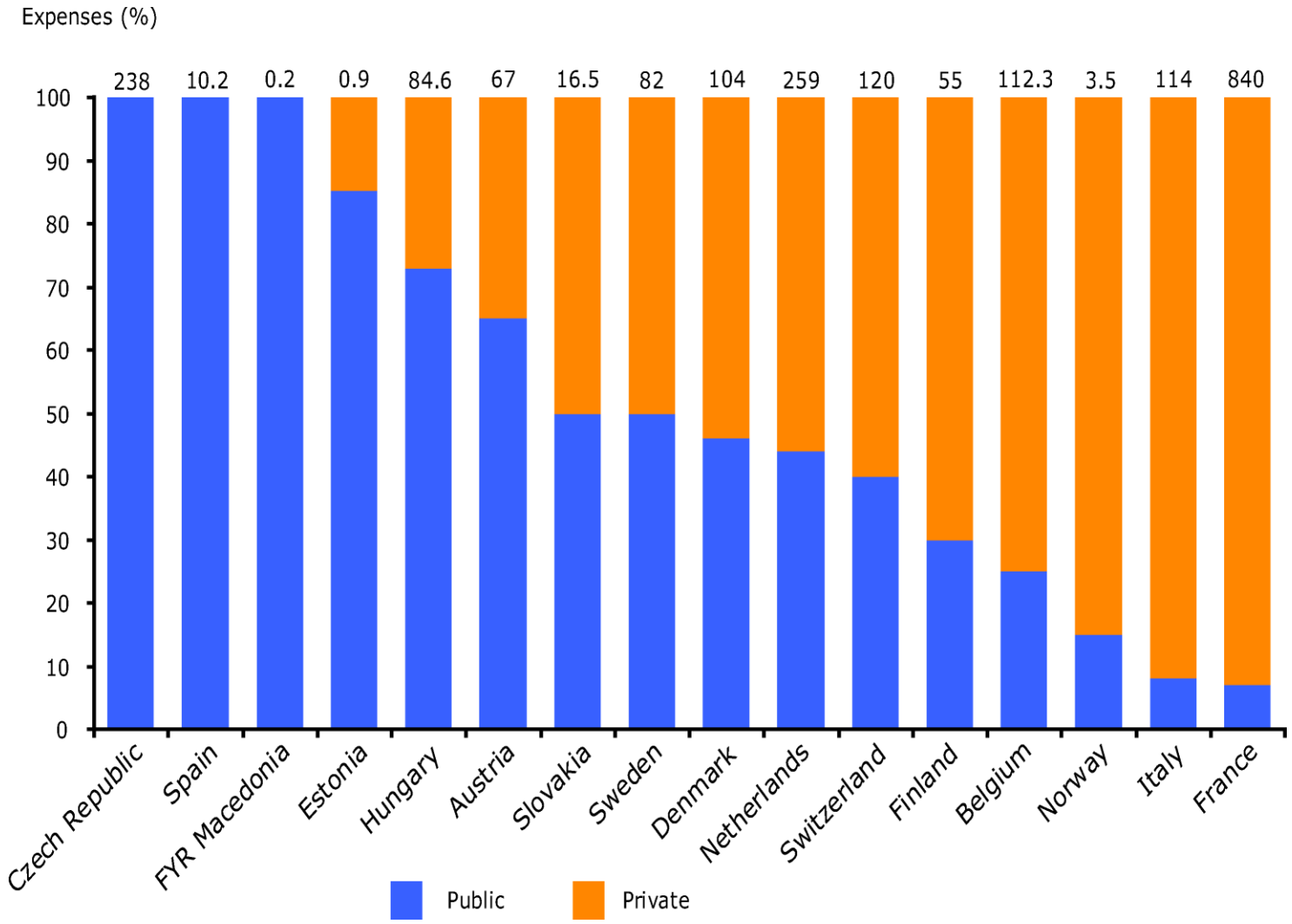
Private vs public funding



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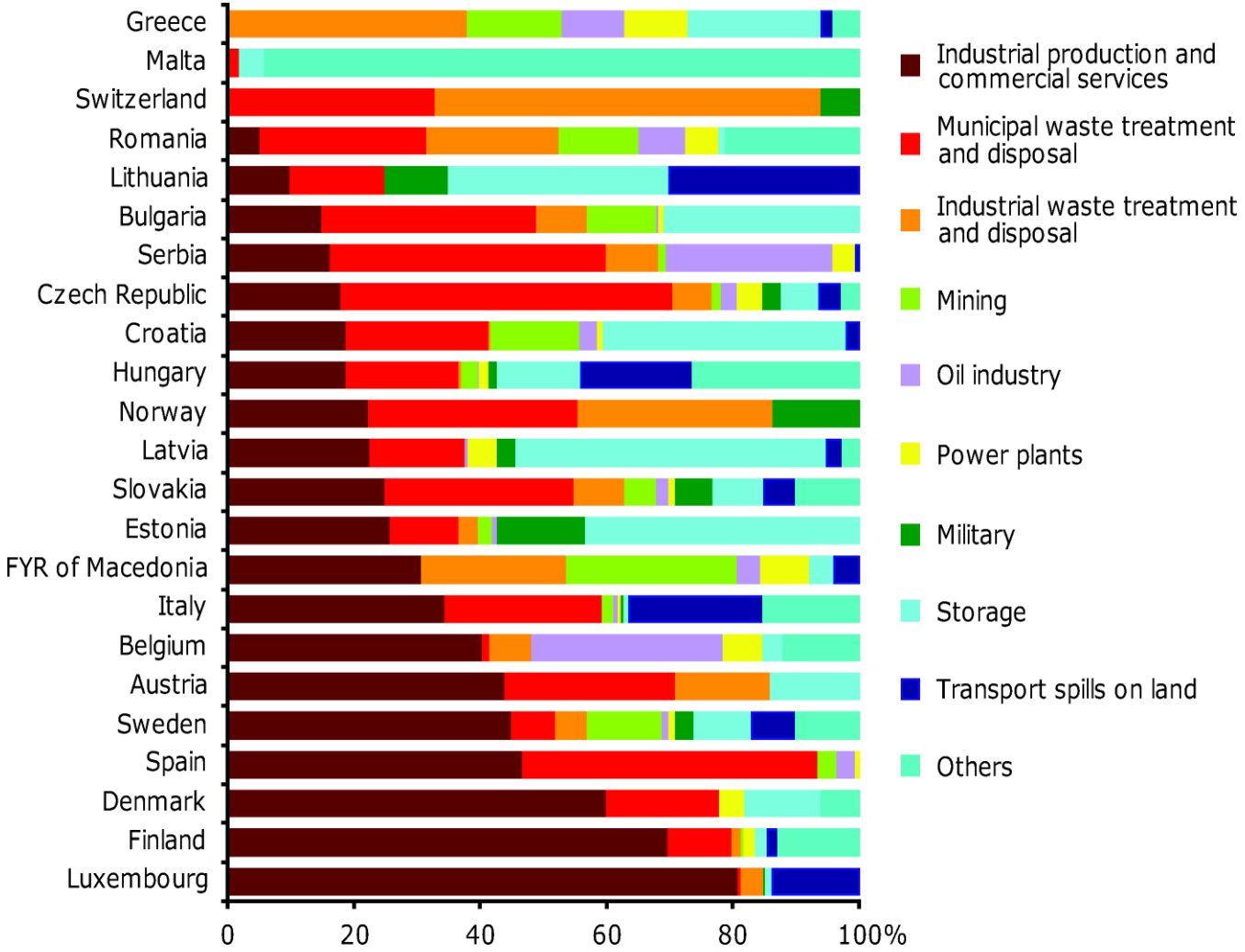
Breakdown of industrial and commercial activities causing local soil contamination



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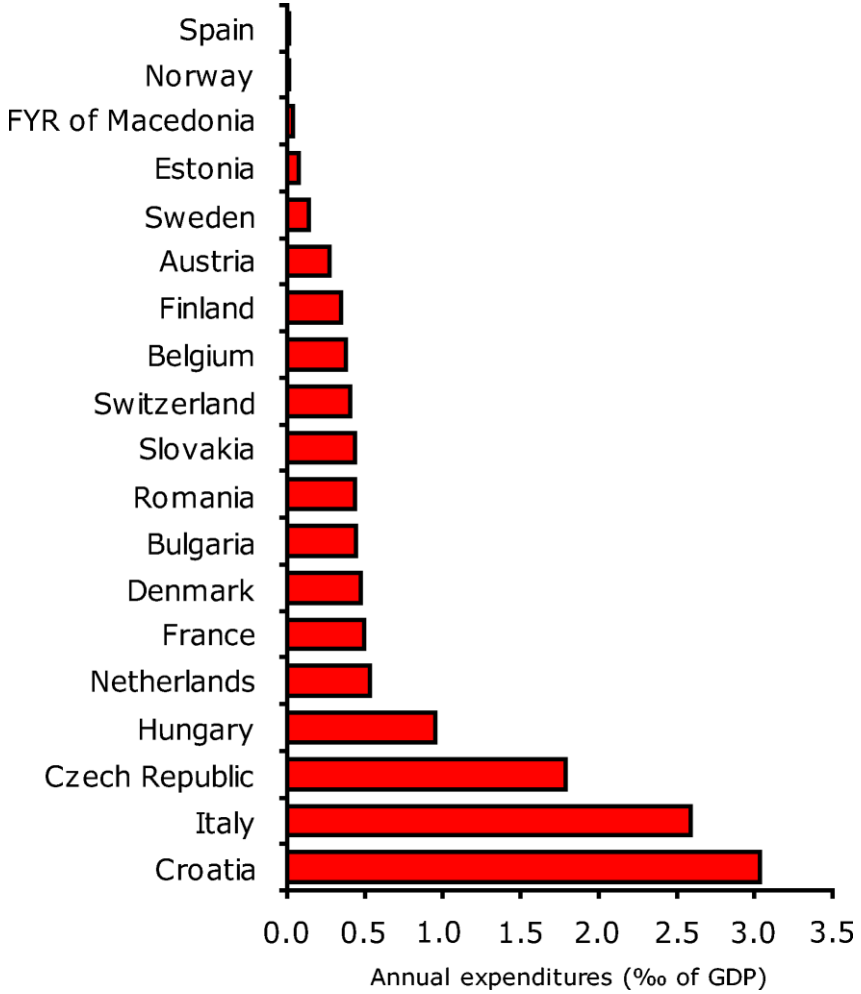
%tage GDP spent on soil remediation



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Investments in soil remediation

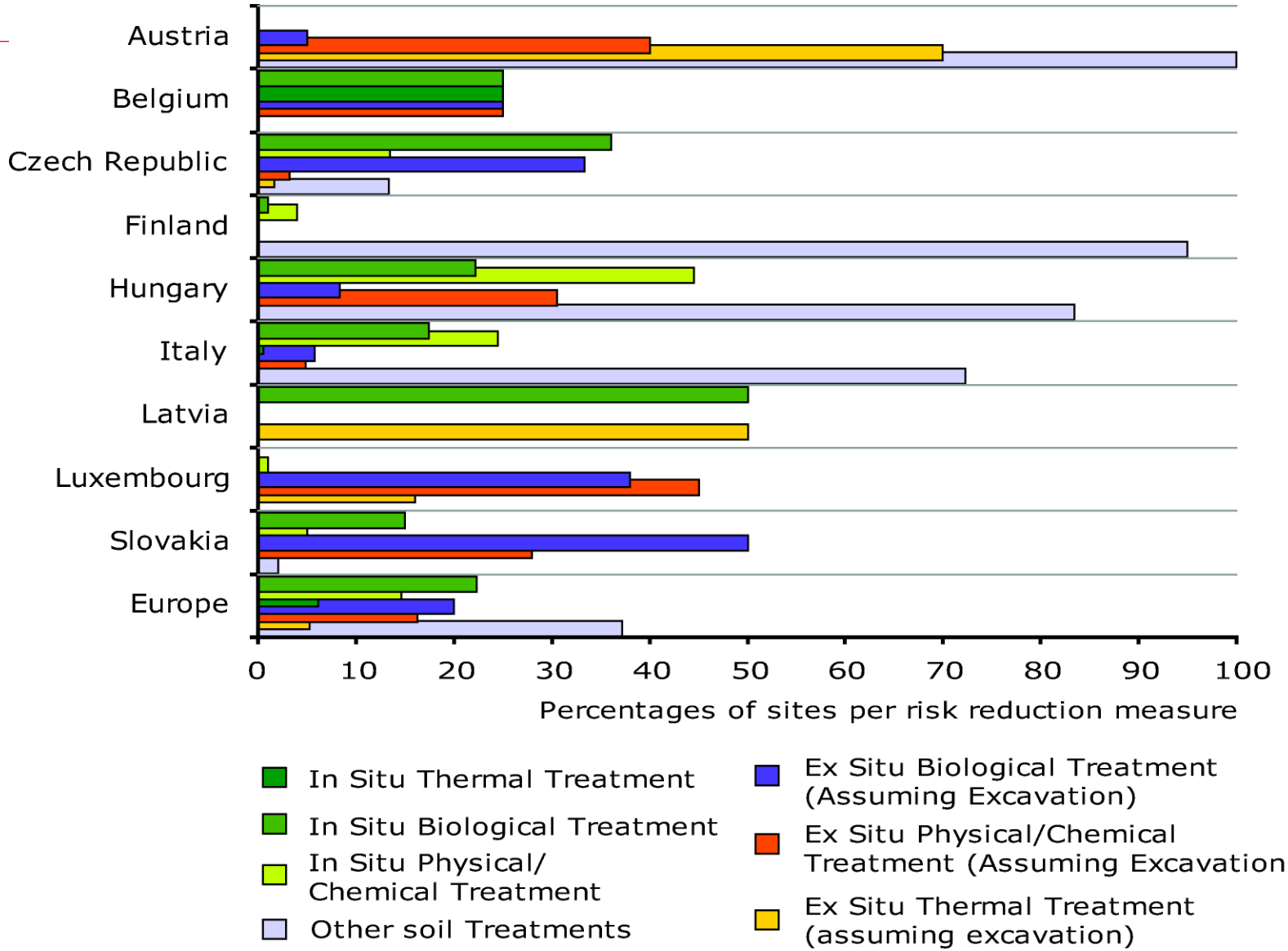
- Average: 12 EUR/year/capita (0.07% of GDP)
- 0.2 to 20 EUR/yr/capita
- 60% remediation
- 40% investigation

- EU Budget: 2.25b€ 2005-2013 (Framework Structural funds)

Unitary costs (caution,...)

- Site investigation
  - 500 to 50.000 €
  - Except Austria (>50K€)
- Site remediation
  - No valid data available

Remediation Technologies



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Brownfields

- Data on the redevelopment of brownfields are patchy and hardly comparable, reflecting the lack of a common definition of the problem across Europe
- **Luxembourg** 30 ha/day in 2006
- **United Kingdom**, targets established to minimise the consumption of greenfield sites and the recycling of land is regularly monitored. The percentage of new developments on previously developed land exceeded 60% in 2003, while the share of new dwellings arising from building on previously developed areas or through the conversion of existing buildings increased from 54% to 73% in the period 1990-2005.

Brownfields (cont'd)

- **Austria**: the number of brownfield sites is in the range of 3.000-6.000, covering an area between 8.000 and 13.000 ha. According to estimates based on their previous use, about 85% of the industrial brownfield sites present no or little contamination and could be revitalised and reused without public funding for remediation. Considering an increase of industrial brownfield sites of about 3 ha per day, about a quarter of the annual land requirement for housing and economic activities could be saved by reconverting brownfield sites to a productive use.
- **Germany**: the average daily greenfield consumption was 93 ha in 2003, 80% of which was used for human settlements. Germany has a target to reduce the consumption of greenfield sites to 30 ha per day by 2020.