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Management and legislation on contaminated soils: the Italian situation

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Regulatory framework: Contaminated Sites - 1

1999-2006

Decree of the Ministry of the Environment n. 471:

Application of the “limit value” criterion

2006-.....?

Legislative Decree n. 152 + Legislative Decree n. 4 (2008)

(“Framework Environmental Regulation”):

Application of a Tiered Risk-Based Approach



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Regulatory framework: Contaminated Sites - 2

Decree of the MoE n. 471/99

✓ Technical Regulation on Cleanup and Environmental Recovery of Contaminated Sites according to art. 17 of Law No. 22/97 (waste legislation), issued on December 1999.

✓ Application of “limit values” for contaminant concentrations in soil and groundwater, to be compared with the effective values detected at the suspected site, in order to define the contamination level and the goal for the remedial action;

Legislative Decree n. 152/06

✓ Framework Environmental Legislation issued on April 14th 2006: 6 sections (1. General, 2. Environmental Impact Assessment, 3. Soil and Water Protection and Management, 4. Waste Management and Soil Remediation 5. Air and Emissions, 6. Environmental Liability). The Title V under section 4 deals with contaminated sites clean-up activities.

✓ Application of a risk-based tiered approach (similar to RBCA, ASTM procedure): Tier 1 = screening values (CSC) equal to the “limit values” set by DMoE n.471/99; Tier 2 = site specific target levels (CSR) calculated by the application of site-specific risk analysis (backward application) both for soil and groundwater



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Regulatory framework: Contaminated Sites - 2

Decree of the MoE n. 471/99

- ✓ Single values proposed for GW (drinkable use), two values for soil (residential and commercial/industrial use); limit values proposed in Annex 1 for about 100 contaminants (inorganic compounds + organic compounds)
- ✓ Site contaminated when even the concentration of a single pollutant is higher than the corresponding limit value set in Annex 1;
- ✓ Application of the “polluter pays principle”: if measured concentrations exceed limit values (Annex 1) the responsible/owner of the site must submit a remediation project

Legislative Decree n. 152/06

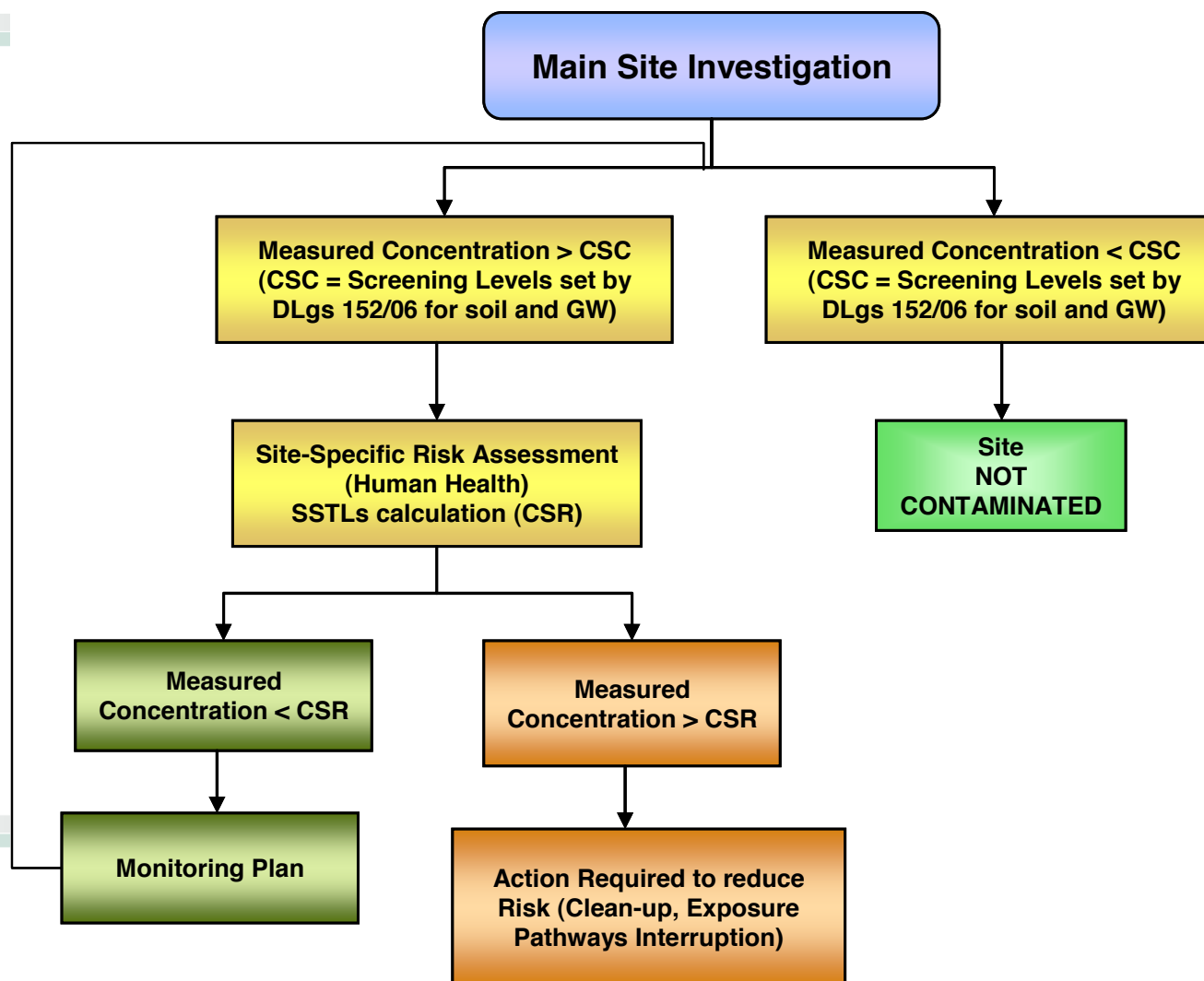
- ✓ Site specific target levels CSR (Concentrazioni Soglia di Rischio, Risk Threshold Levels) calculated by the application of a site specific risk (human health) analysis procedure.
- ✓ Site contaminated when the measured concentration of a single pollutant is higher than the corresponding CSR calculated by site-specific risk analysis;
- ✓ If the measured concentrations exceed screening values (CSC), site-specific risk analysis must be performed. If CSR values are exceeded, the responsible/owner of the site must submit a remediation project, otherwise monitoring action required.



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Regulatory framework: Technical Procedure





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Regulatory framework: recent updates

- ✓ Law n. 214, 22 dec 2011 (art. 40, comma 5): remediation activities can be implemented by different steps (temporal and/or spatial phases) in order to facilitate the application of innovative technologies (pilot-scale test)
- ✓ Law n. 28, 24 mar 2012 (art.3, comma 1): application of risk assessment and remediation procedures to filling materials and heterogeneous soils to boost remediation activities of historical contamination
- ✓ General simplification of administrative burden and operational tasks in order to facilitate the industrial sectors in managing contaminated sites



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Regulatory framework: Environmental Liability - 1

Since 1986, as first Country in Europe, Italy has used a legal system devoted to the reparation of environmental damages. Legal actions concern the damages caused to all the natural resources (soil, water bodies, atmosphere, habitat, species, landscape, ecosystems, etc.), without any selection of single categories of goods to be protected.

Law n. 349/1986, article 18 makes a civil action available to the public authorities with the purpose to achieve, the recovery and/or the economic compensation of damages caused to natural resources by illegal activities, before a judicial court.



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Regulatory framework: Environmental Liability - 2

The new law: Decree n. 152/2006

The new law of environmental damage reparation (decree n. 152/2006) works for the damages arising from

facts occurred after 2006

This law set up new legal definitions, procedures and criteria for the environmental damage assessment, also on the basis of the European directive n. 2004/35/CE.

In particular, the environmental damage is defined as

an impairment significant and measurable that directly or indirectly occurs to a natural resource or to a service given by a natural resource

the law n. 349/86 still works in case of damages arising from facts occurred before 2006.



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Major innovations in comparison with the previous law

There is a strict liability:

in case of damages to living species and natural habitats subject to special protection,

in case of a land contamination that creates a significant risk for the human health and

in case of impairment of the ecological, the chemical or the qualitative status of a water body.

In these cases the Ministry of the environment has to ensure concrete measures of reparation of the damage instead of an economic compensation.

It is maintained a by-fault liability in all the other cases of environmental damages

The damage reparation can be claimed by the Ministry through a legal action before a Tribunal or, directly, through a self-executing order.



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Major innovations in comparison with the previous law

The reparation is established by reference to the **primary remediation** (the measure that returns the damaged natural resources or services to the baseline condition), the **complementary remediation** (the measure that produces an equivalent level of natural resources or services when the primary remediation is totally or partially impossible) and the **compensatory remediation** (the additional improvements that compensate the temporary losses of natural resources or services from the date of damage).

Monetary compensation is the last option according to the EU Directive on Environmental Liability



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The “global transactions”: Law 13/2009

The recent law 13/09 (February 2009) states the possibility for the MoE to sign one or more “global transactions” with one or more public/private companies to cover remediation, restoration and environmental damage costs. The scheme of the “global transaction” is developed by the MoE with the technical support of ISPRA and COVIS (Commission of the MoE) and approved by the stakeholders and the juridical defence of the State (“Avvocatura dello Stato”).

The amount paid for the “global transaction” covers the remediation, restoration and environmental damage costs and any other pending action for the facts included in the transaction.

The funds recovered through the “global transaction” are used according to the indication given by decree by the MoE, in agreement with the Ministry of the Economy.

The areas involved in the transaction can be used, according to the urban plans, if the use does not hinder remediation activities and/or the activities detailed in the transaction itself.



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Regulatory framework: Legal Civil Action

- The legal civil action can be promoted by the Ministry of the environment and, secondarily, to the relevant local public authorities;
- Such actions can be promoted before a civil court or a criminal court;
- Criminal courts apply when damage is caused by an activity that represents a crime prosecuted by Public Accusation

CRIMINAL COURT PROMOTION

Public Accusation

action directed to apply a sanction (imprisonment or fine)

Ministry of Environment

concurrent action directed to ensure the reparation of the damage.

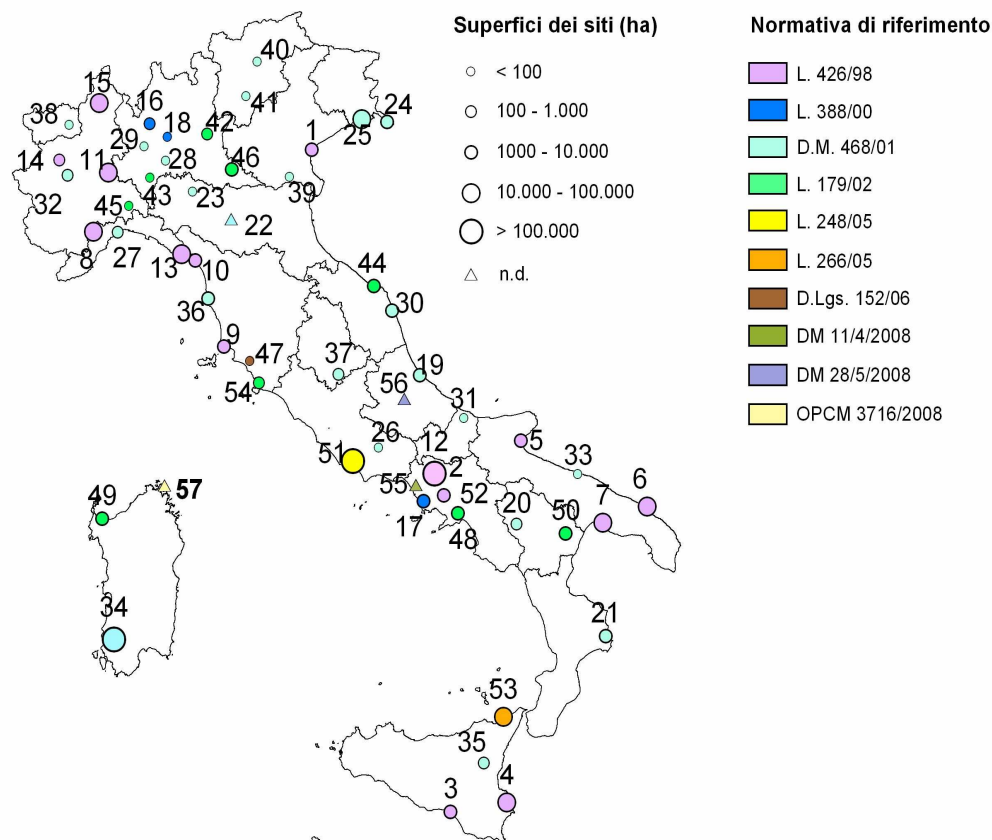
Note: In case of condemnations judgment, compensation amounts are transferred to a public fund, whose resources are used to remediate the contaminated sites.



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National Priority List Sites



- ✓ first list set in 1998 (L. 426)
- ✓ 57 sites (last added at the end of 2008, “La Maddalena”)
- ✓ more than 3% of the italian territory
- ✓ about 34% water (sea, rivers, lagoons, lakes)
- ✓ 330.000 ha marine areas
- ✓ procedure under responsibility of the Ministry of the Environment with the technical support of ISPRA and other relevant scientific institutes

*Data on NPL sites collected by ISPRA and available (in English) at
http://annuario.apat.it/annuarioDoc_EN.php?idv=6&type=key*



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1.Management

Region	Inventory	Potential y contaminated sites (estimated)	Potentially Contaminated sites (investigation completed)	Contaminated Sites	Measures started	Remediation completed
Piemonte	Y	1.315	402	466	1.171	146
Valle d'Aosta	Y	-	14	12	15	22
Liguria	Y	-	81	119	78	50
Lombardia	Y	3.970	1.879	853	-	1.238
Provincia Autonoma di Trento	Y	ND	31	86	86	351
Provincia Autonoma di Bolzano	Y (only contaminated sites)	-	-	272		114
Veneto	Y	541	181	87	376	55
Friuli - Venezia Giulia ^a	No	684	229	-	-	94
Emilia - Romagna	No	ND	225	323	343	331
Toscana	Y	2.826	477	1.050	324	257
Umbria ^a	Y	120	44	64	64	12
Marche	Y	673	81	297	741	295
Lazio	No	887	621	71	798	18
Abruzzo	-	-	-	-	-	-
Molise	Y	-	-	2	3	0
Campania	Y	2.592	359	183	73	12
Puglia	Y	298	98	200	152	1
Basilicata ^a	No	-	316	6	190	3
Calabria	Y	ND	646	52	18	7
Sicilia ^a	Y	642	45	-	347	0
Sardegna	Y	574	403	171	100	5
Italia	-	15.122	6.132	4.314	4.879	3.011

Source: Special Commission of the Italian Parliament for the investigation on illegal activities related to waste management (2012), ISPRA (2012)

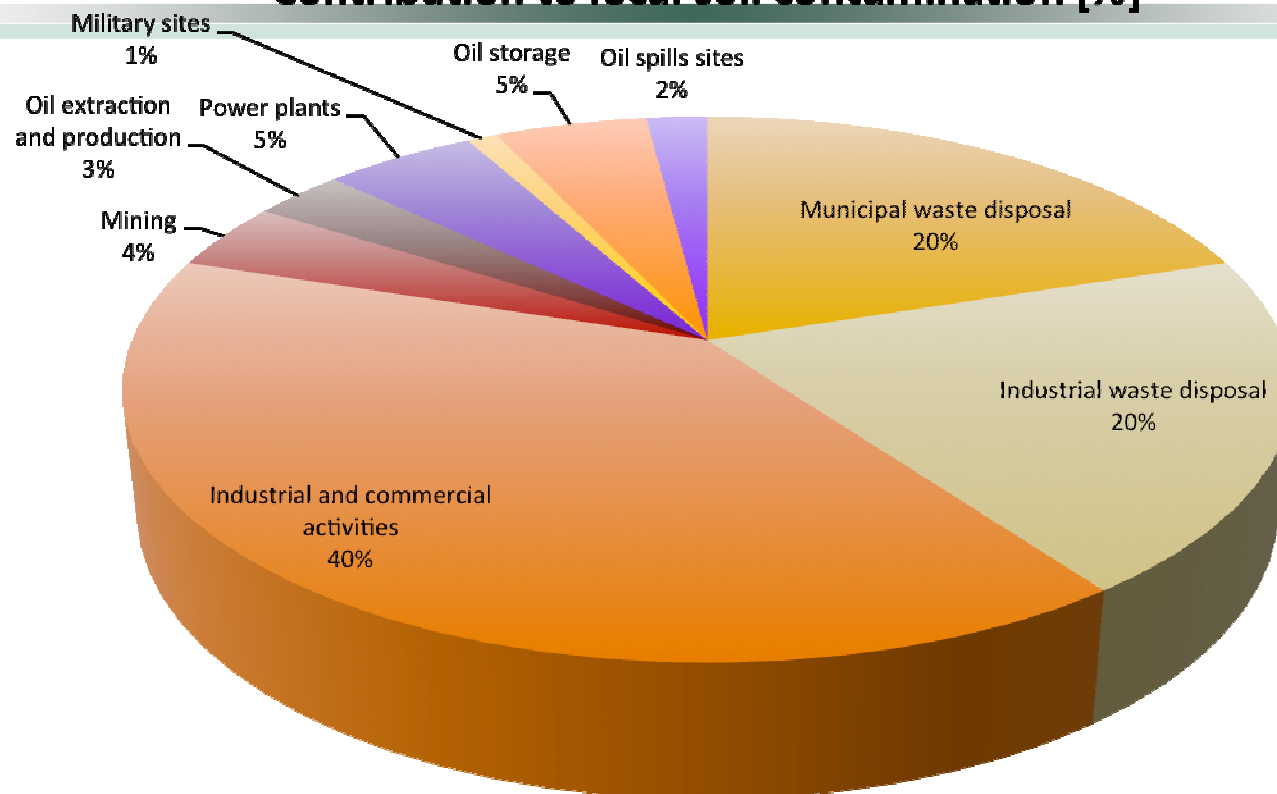


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2. Polluting Activities - 1

Contribution to local soil contamination [%]



Data on NPL sites collected by ISPRA and available at EIONET

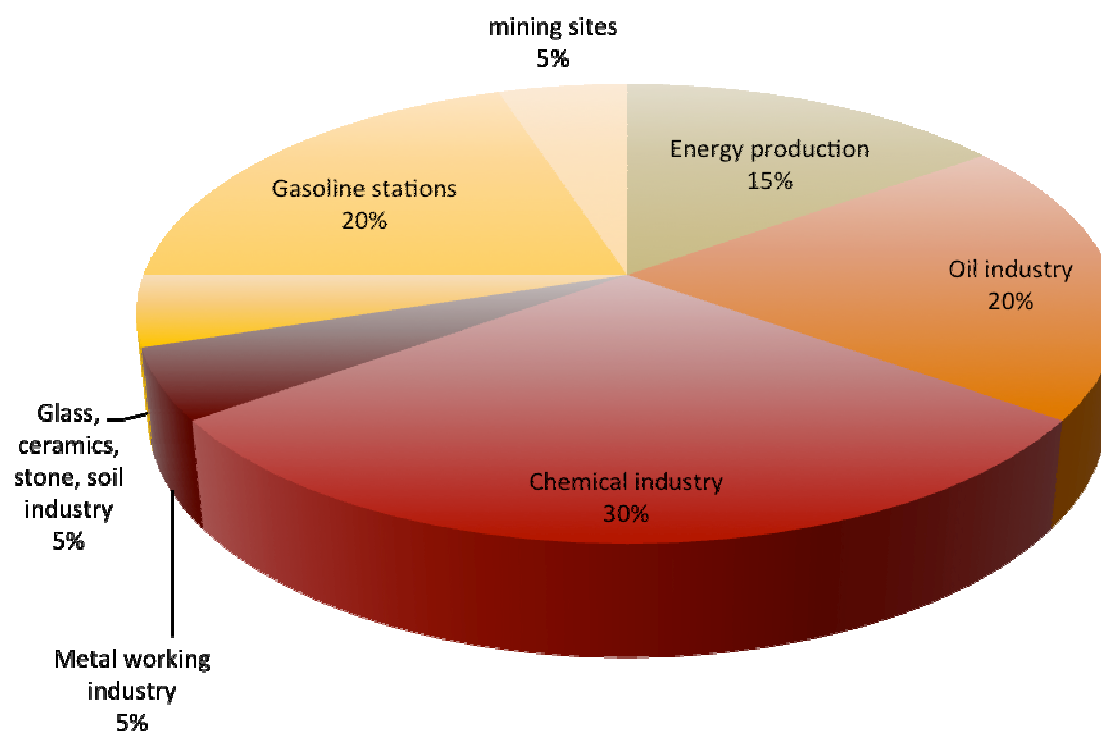


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2. Polluting Activities - 2

Contribution to local soil contamination [%]



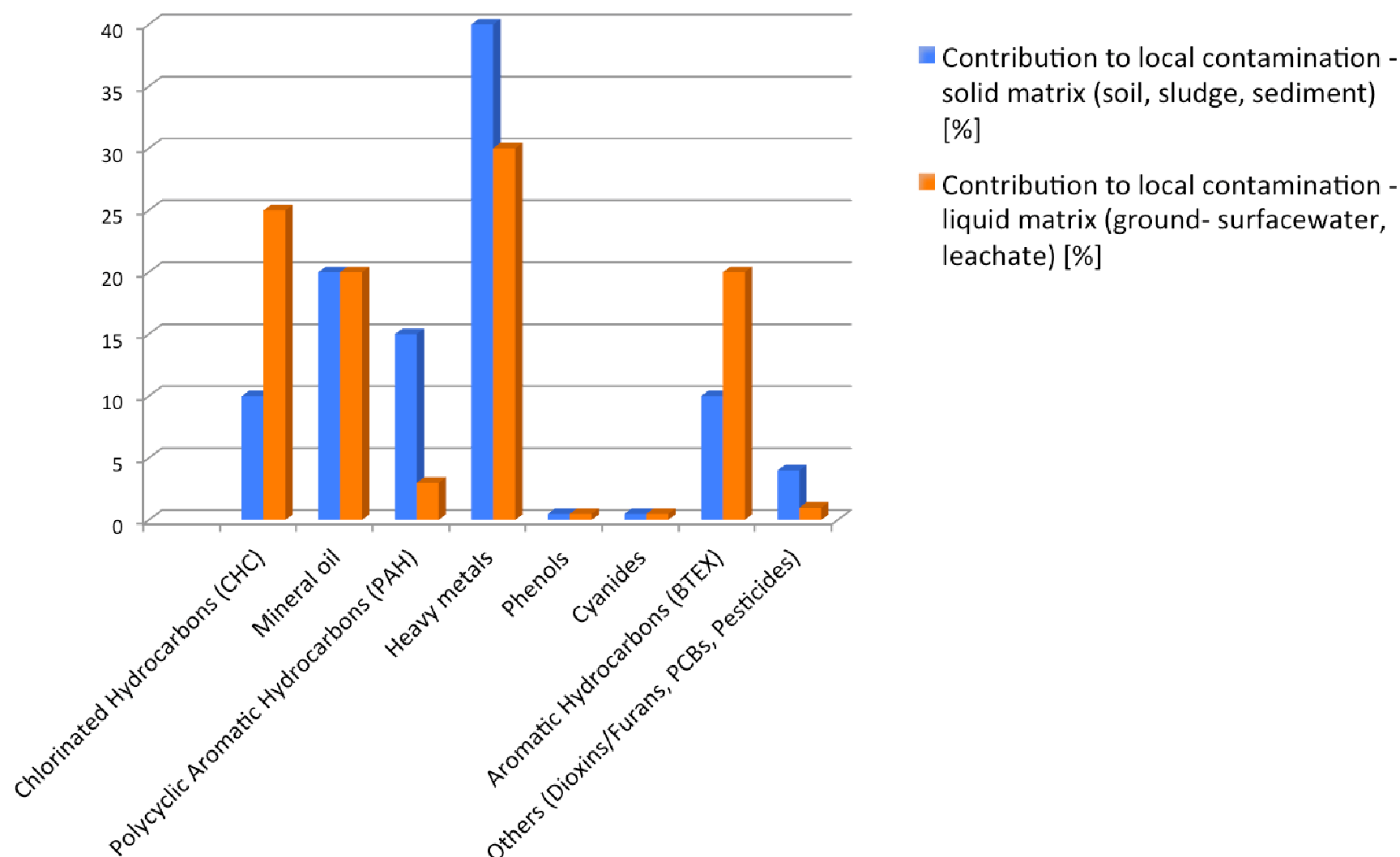
Data on NPL sites collected by ISPRA and available at EIONET



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3. Environmental Impacts



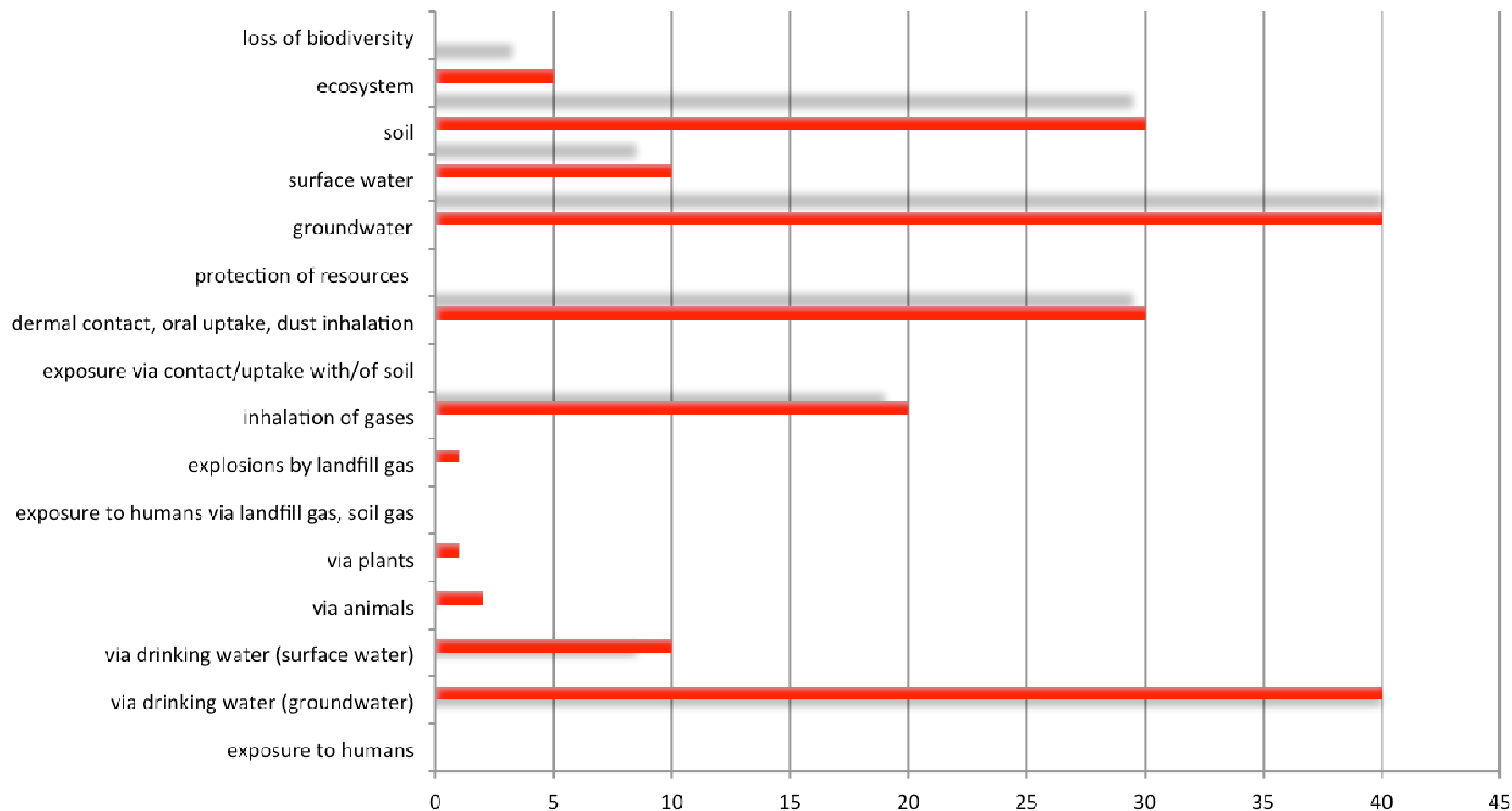
Data on NPL sites collected by ISPRA and available at EIONET



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5. Remediation Priorities (1)



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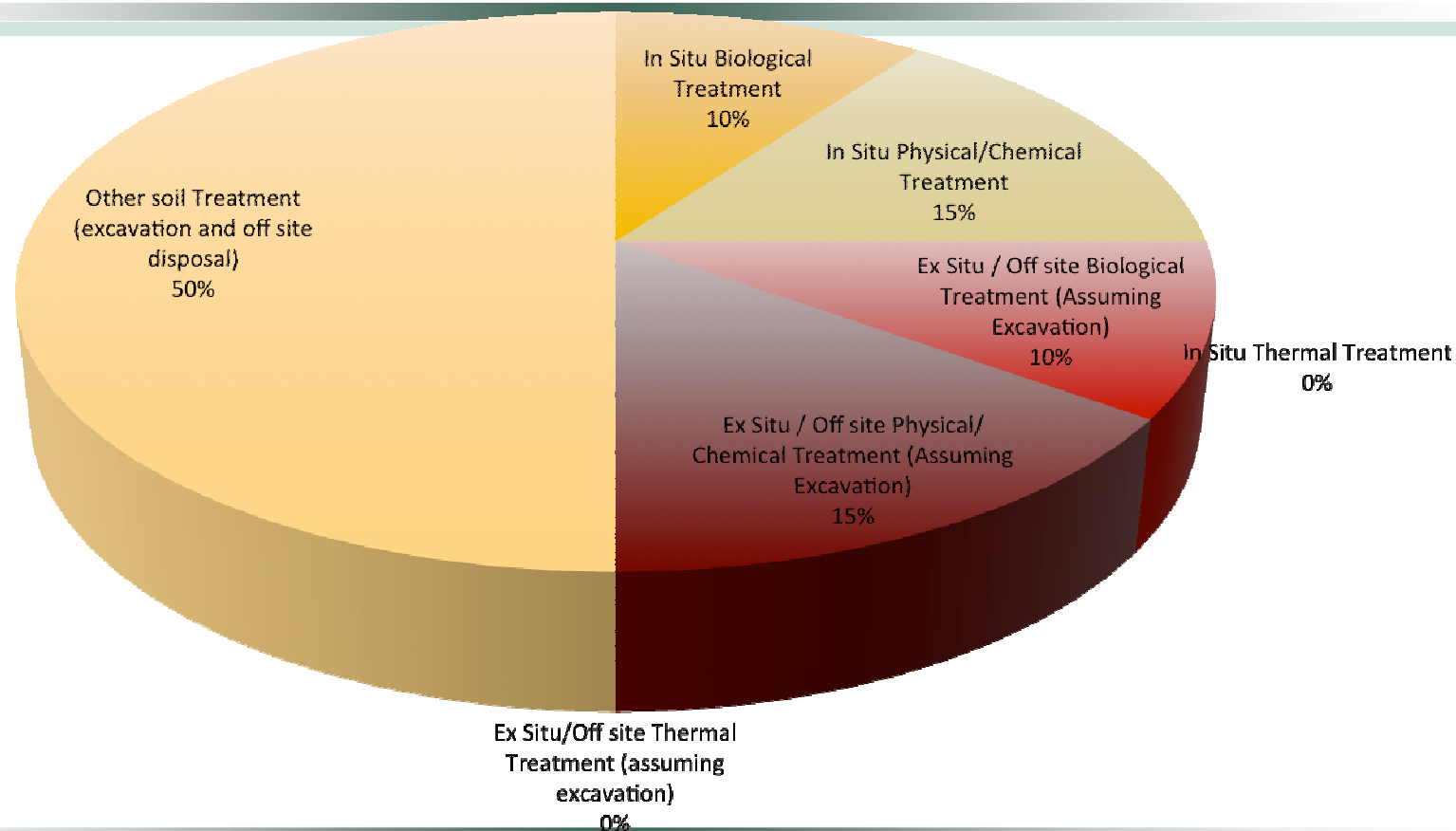


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5. Remediation Priorities (2)

Risk reduction measures for soil, sediment and sludge [%]



Data on NPL sites collected by ISPRA and available at EIONET

Conclusive Remarks

- ✓ Contaminated Sites Management represents one of the major institutional tasks and challenges for Italy
- ✓ The complexity of the regulatory framework and the lack of clear technical indications on characterization, risk assessment and remediation bring to time (and money!) consuming legal actions in the field of contaminated sites: some clarification were provided through regulatory acts. Furthermore, the development of guidelines and standards will hopefully help to reduce this actions between P.A. and private companies
- ✓ Detailed technical indications cannot be included in the legislation in any case since in this field scientific and technical progress is very fast and guidelines/protocols need to be frequently updated. In this sense ISPRA is assuming an important role by developing and updating guidelines and protocols that are widely used as technical support by both P.A. and private stakeholders.