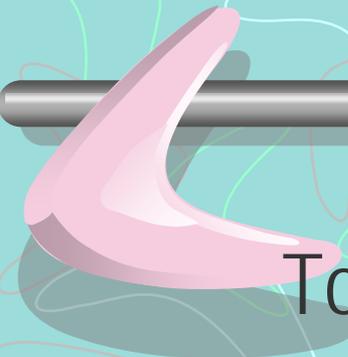


Italy: developments in the new legislation and progress in the remediation of contaminated sites

F. Quercia, APAT



Tour de Table

NATO CCMS Pilot Study Meeting

17-22 June 2007, Ljubljana, Slovenija



Legal references

Old

Environment Ministry Decree, D.M. 471/1999 ("Technical regulation for the management of contaminated sites", after Waste Act)

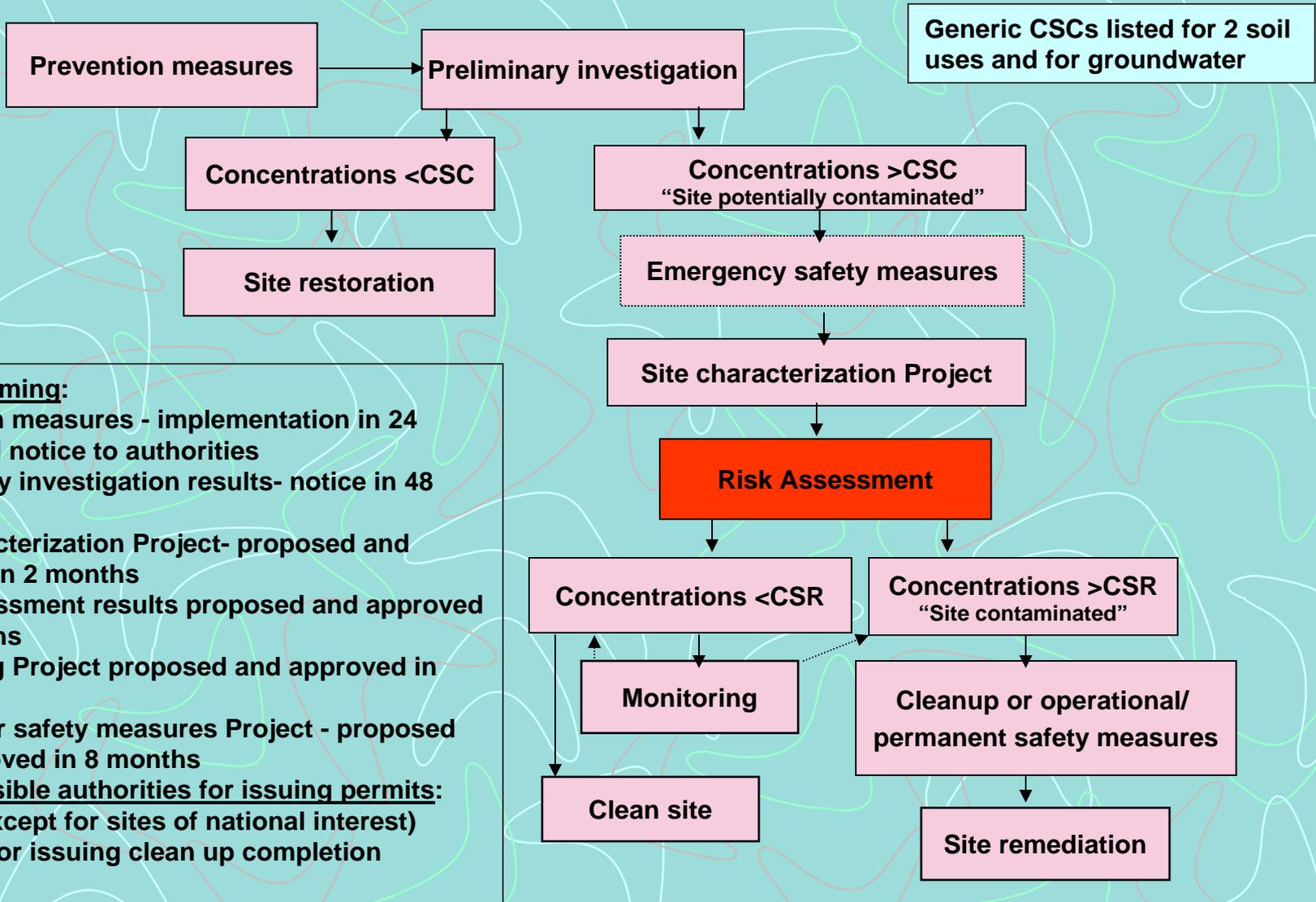
- Established thresholds (generic limit concentration values in soil and gw) for the identification of contaminated sites and as cleanup goals. Limited space to risk-based solutions. No distinction between historic/new contamination and dismissed/operating sites.

New

Government Decree, D. Lgs. 152/2006 (Environmental norms), Part IV, Title V: "Remediation of contaminated sites"

- Establishes risk-based and site-specific criteria for the management of contaminated soil and gw to be integrated with (screening) generic criteria. Flexible criteria for management of contamination at active sites. One step only remediation project needed. No distinction new/historic.

New procedure, Decree 152/06





Other provisions in the new legislation

Water protection - The new legislation allows for:

- discharging of extracted groundwater into surface water bodies according to emission limits
- reinjection of treated groundwater into same gw body provided that quality objectives in gw body are fulfilled
- compliance with risk-based gw objectives may be fulfilled at some distance from contaminant source

Risk assessment

- same old “limit values” used now as “screening values”
- focused on human health and groundwater protection
- incremental lifetime cancer risk at 10^{-5}
- major exposure routes defined. Methodological reference: ASTM standards
- soil contamination to be referred to all grain size fractions < 2 cm.
- site characterization and conceptual model identification steps defined



Other issues

- Both the old and new law are included in the waste legislation.
- A time threshold between historic and new contamination has not been formally established.
- Both laws envisage polluter's obligations for immediate actions at (potentially) contaminated sites, regardless of when contamination occurred.
- Non responsible landowner or site manager, by prompt communication to competent authorities and for events occurred before legislation enforcement, may apply for including the site in a Regional Remediation Program. In this case remediation follows the priorities established in the Regional Program.
- The public administration carries out the clean-up if polluter cannot be identified or non liable site owner cannot bear the costs. However this condition represents a real burden on the property itself. Site owner shall refund the costs according to site market value after remediation.



What happens now

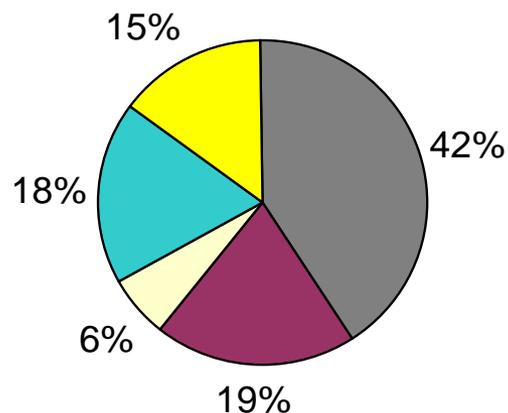
Amendments to D.Lgs. 152/06 being proposed:

- Transient regime to projects started before may 2006: old DM 471/99 regime to be followed.
- Risk assessment criteria to be reviewed: no risk-based solutions for gw bodies (compliance with drinking gw standards required at site boundary); incremental lifetime cancer risk at 10^{-6} .
- Move legislation on contaminated sites out of Waste legislation and into Liability (?).

Implementation of EU Directives

- Many efforts in order to comply with and implement Liability, WFD, GWD and proposed SFD.
- Difficult to interpret the field of application of each of these directives with respect to the management of contaminated sites (new and old, soil and water.....). Lack of integration creates problems.
- How to merge systematic planning for the management of historic contamination with obligations for immediate actions, that are main driver for remediation?

Progress in the management of contaminated sites (APAT, Env. data yearbook 2006)

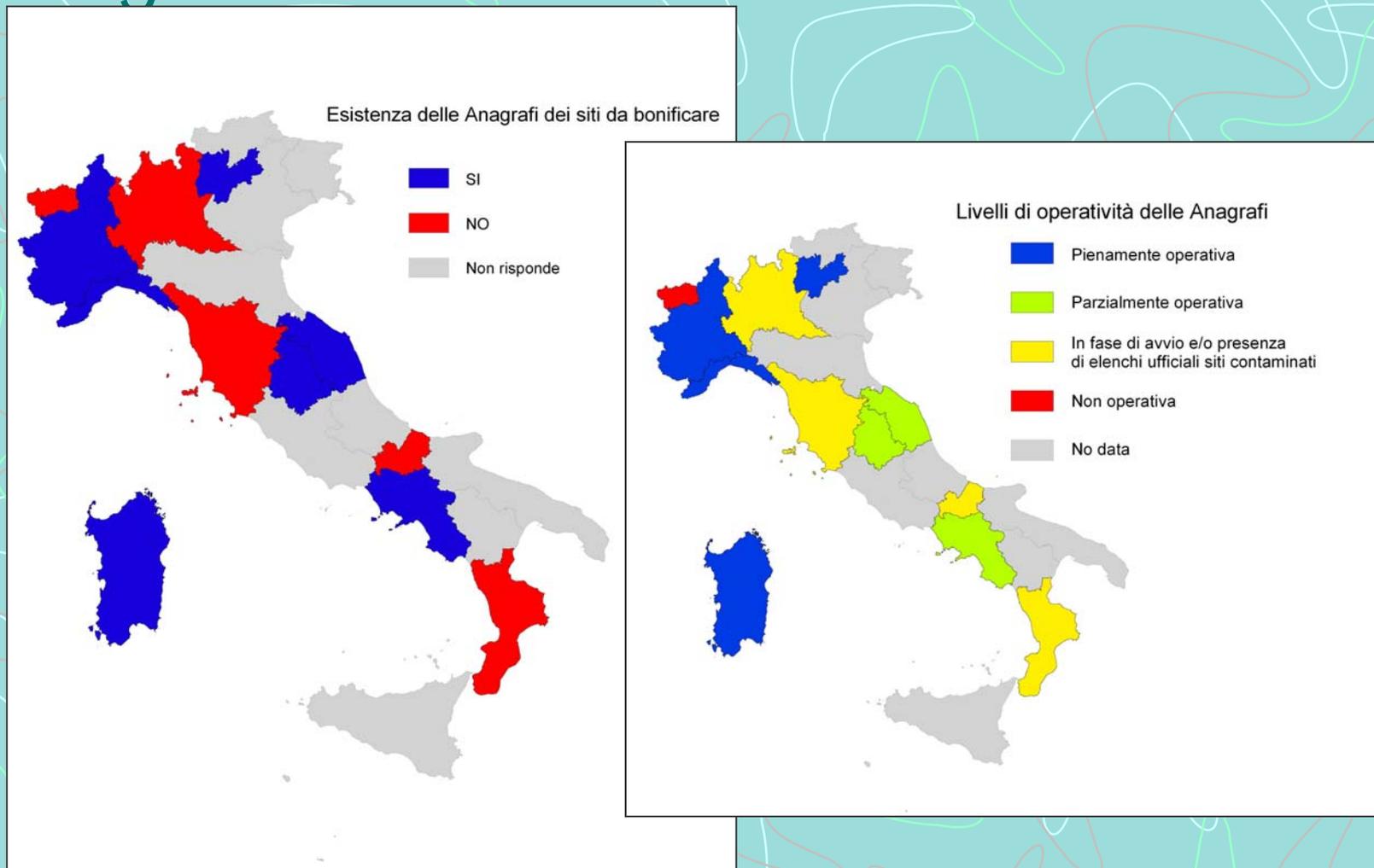


■ Preliminary investigation completed 2018 ■ Characterization plan approved 962
□ Preliminary remediation plan approved 318 □ Final remediation plan approved 903
■ Remediated 741

Total 4942

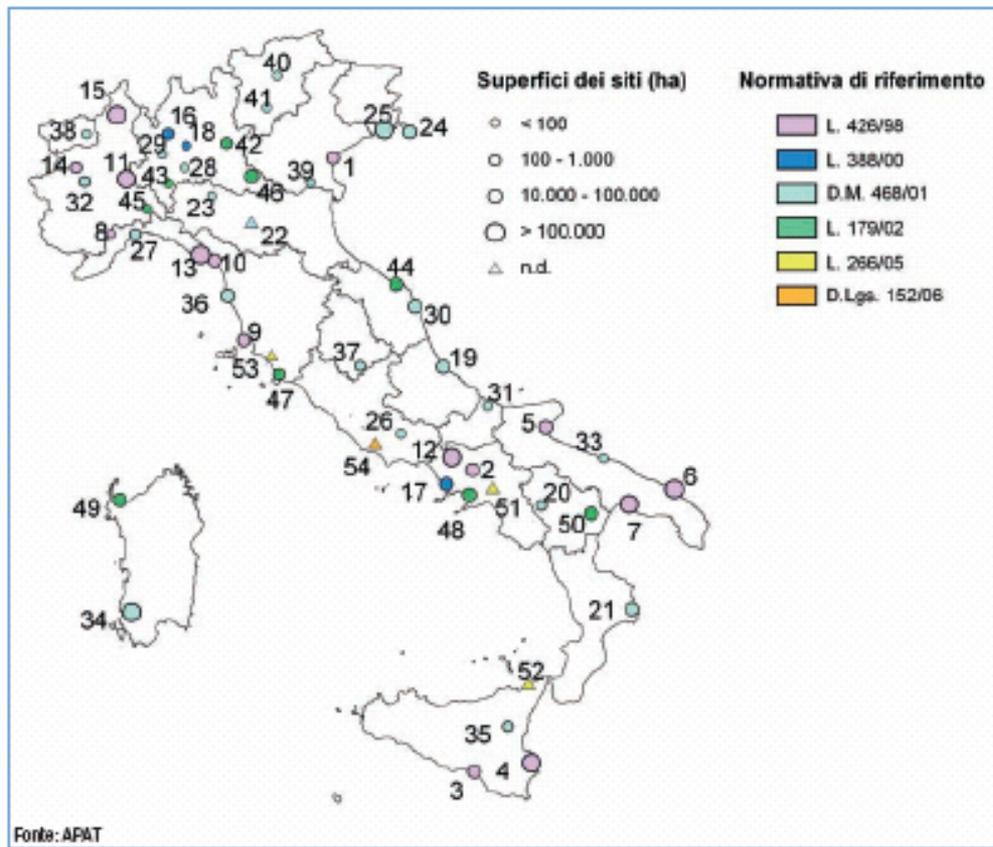
Identified potentially contaminated sites: 13,000 (estimated total 100,000)

Regional inventories



Only few regions hold approved and operative inventories

54 sites of national interest



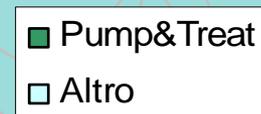
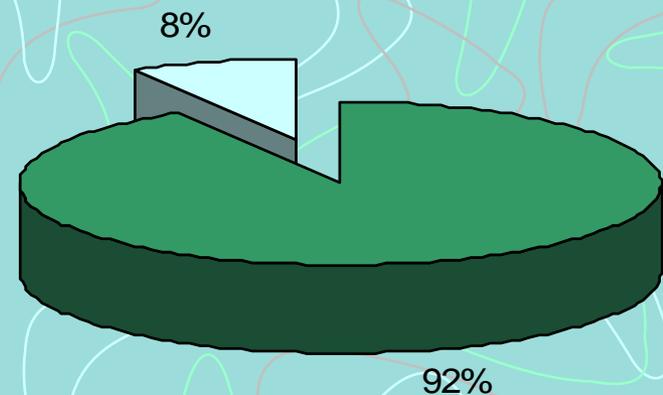
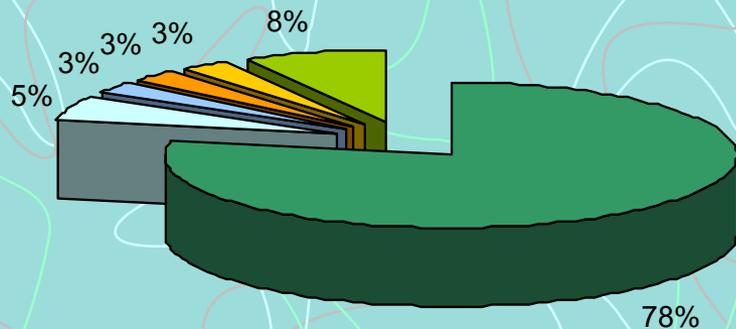
Area covered on land: 639,000 ha (> 2% of national territory)

Progress:

- investigation completed over 140,000 ha
- remediation projects approved over a number of sub-areas (properties)

Estimated costs: 2.9 MM € (0.2% GDP)

Technologies applied



➤ SOIL

➤ MOST URGENT REMEDIATION PROJECTS APPROVED FIRST

➤ TIME IS THE MOST RELEVANT FACTOR IN SELECTING A TECHNOLOGY

➤ GROUNDWATER

➤ PUMP AND TREAT MOSTLY APPLIED AS A SAFETY ACTION, NOT AS A PERMANENT SOLUTION



Considerations

- Experience and knowledge has increased in the last 10 years both in public and in private bodies. APAT has developed manuals for site investigation and for risk assessment.
- Still more focus on risk assessment rather than on risk management and sustainable solutions.
- Legislation and guidelines need upgrade and better compliance with existing and forthcoming EU directives.
- Little funds to research available. National research programs missing.