

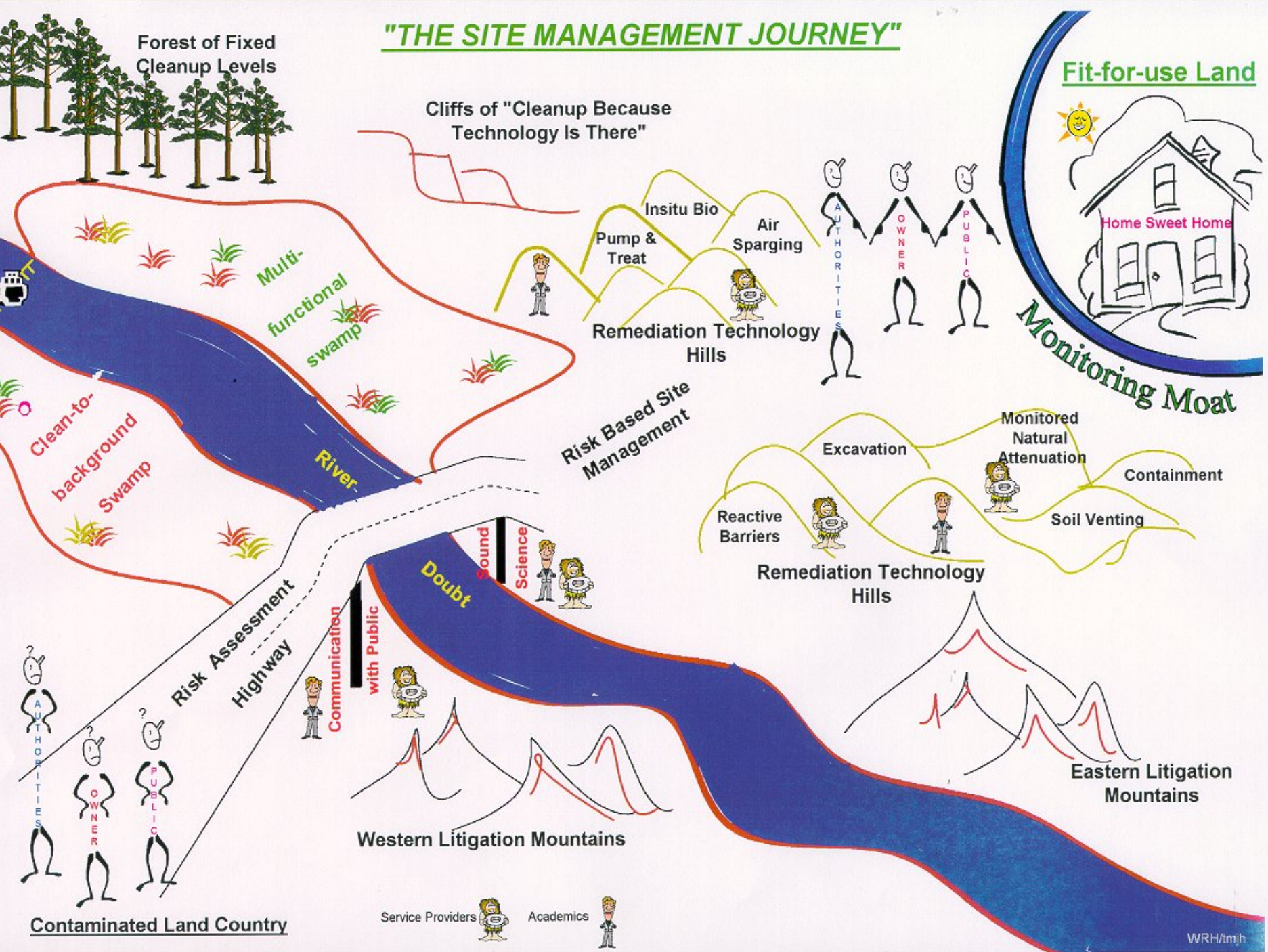


# **10 YEARS OF CONTAMINATED LAND MANAGEMENT IN EUROPE**

**A RBLM Journey  
by Common Forum and NICOLE**

Harald Kasamas at  
NICOLE Workshop in Leuven, 5./6.10.2006

# "THE SITE MANAGEMENT JOURNEY"



... in the 80's ...

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few severe incidents ... major media attention

→ Political Response:

**Maximum Risk Control**

→ no remaining contamination = no remaining risk

= no remaining liability !

→ suits precautionary strategies !

... in the 90's ...

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... land contamination = widespread problem

...

... drastic risk control = neither technically

nor economically feasible ...

→ strategies to manage „historic“ contamination:

**suitable for use**

→ remaining contamination = acceptable risk ?

= remaining liability ?

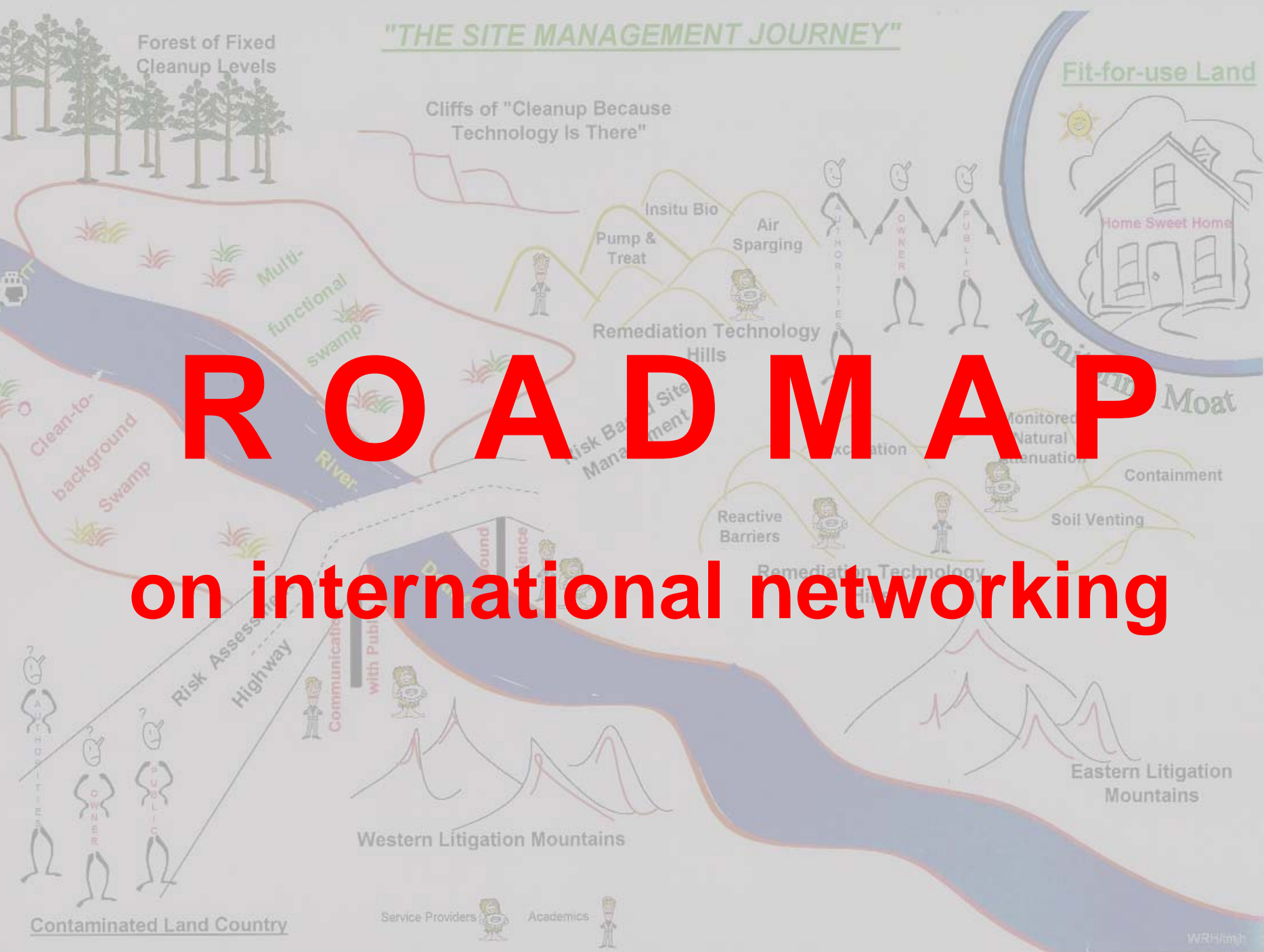
# Challenge

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**How to reduce the cost of dealing with land contamination without compromising public health and water quality, or business confidence in the benefits of land regeneration and sustainable use of soil?**

**→ towards international exchange and cooperation**

"THE SITE MANAGEMENT JOURNEY"



**R O A D M A P**

**on international networking**

# Roadmap

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**since 80's**      **NATO/CCMS → rem. technologies**

1992              TCB report

since 1993      Internat. Committe on CL (worldwide)

since 1994      Common Forum on CL (Europe)

1996 - 1998    CARACAS (RA)      } → **NICOLE**

1998 - 2001    CLARINET (RM)     }

since 2000      ... many CL-related FP-projects

2001              Common Forum continued

→ **EU Soil Policy**, EU GWD, EU Env. Liability

NATO/CCMS PILOTSTUDY GROUP  
Budapest 1992



# Roadmap

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# 1<sup>st</sup> Internat. Committee Meeting in Vienna, Nov. 1993

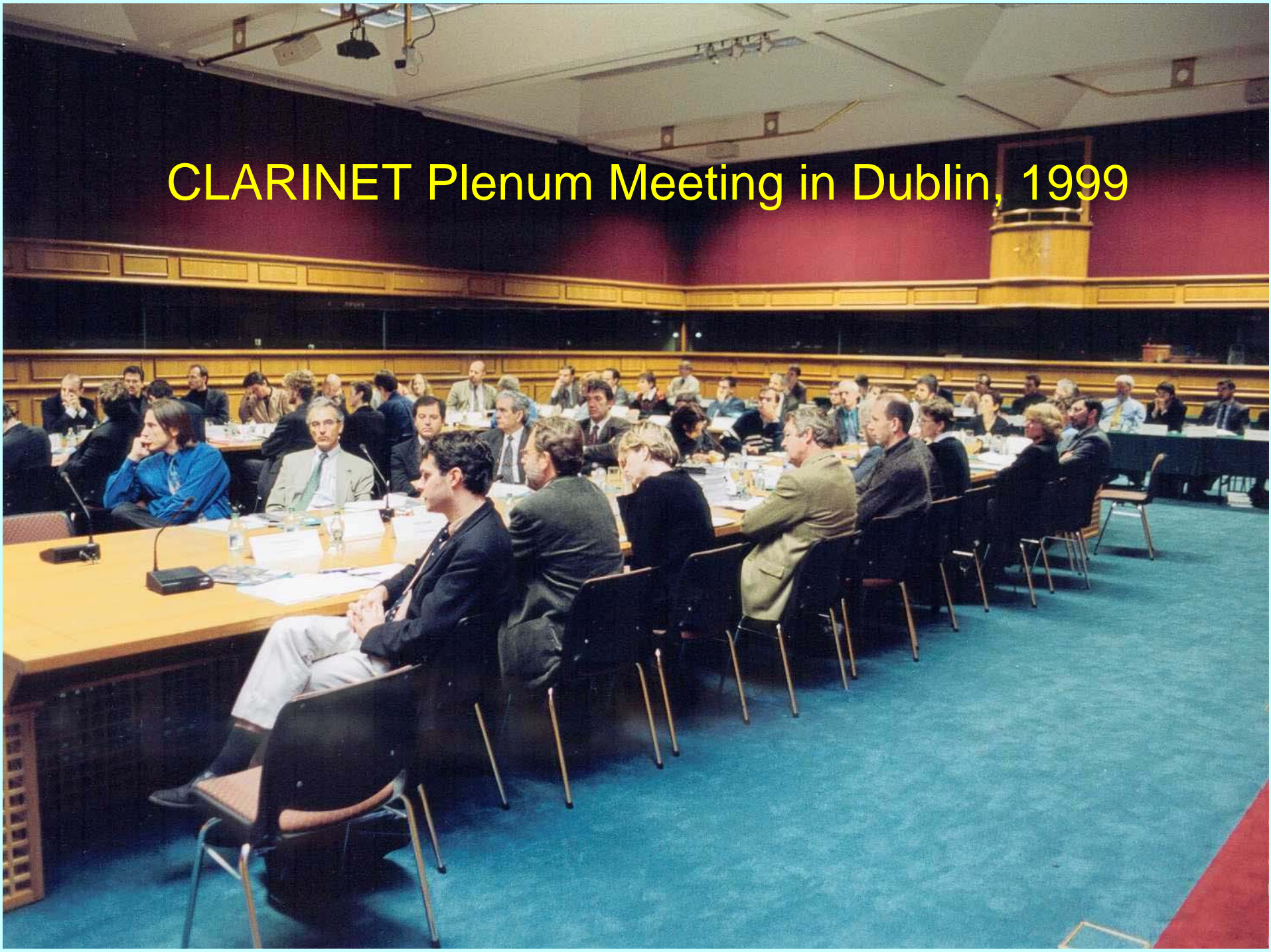


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# CLARINET Plenum Meeting in Dublin, 1999



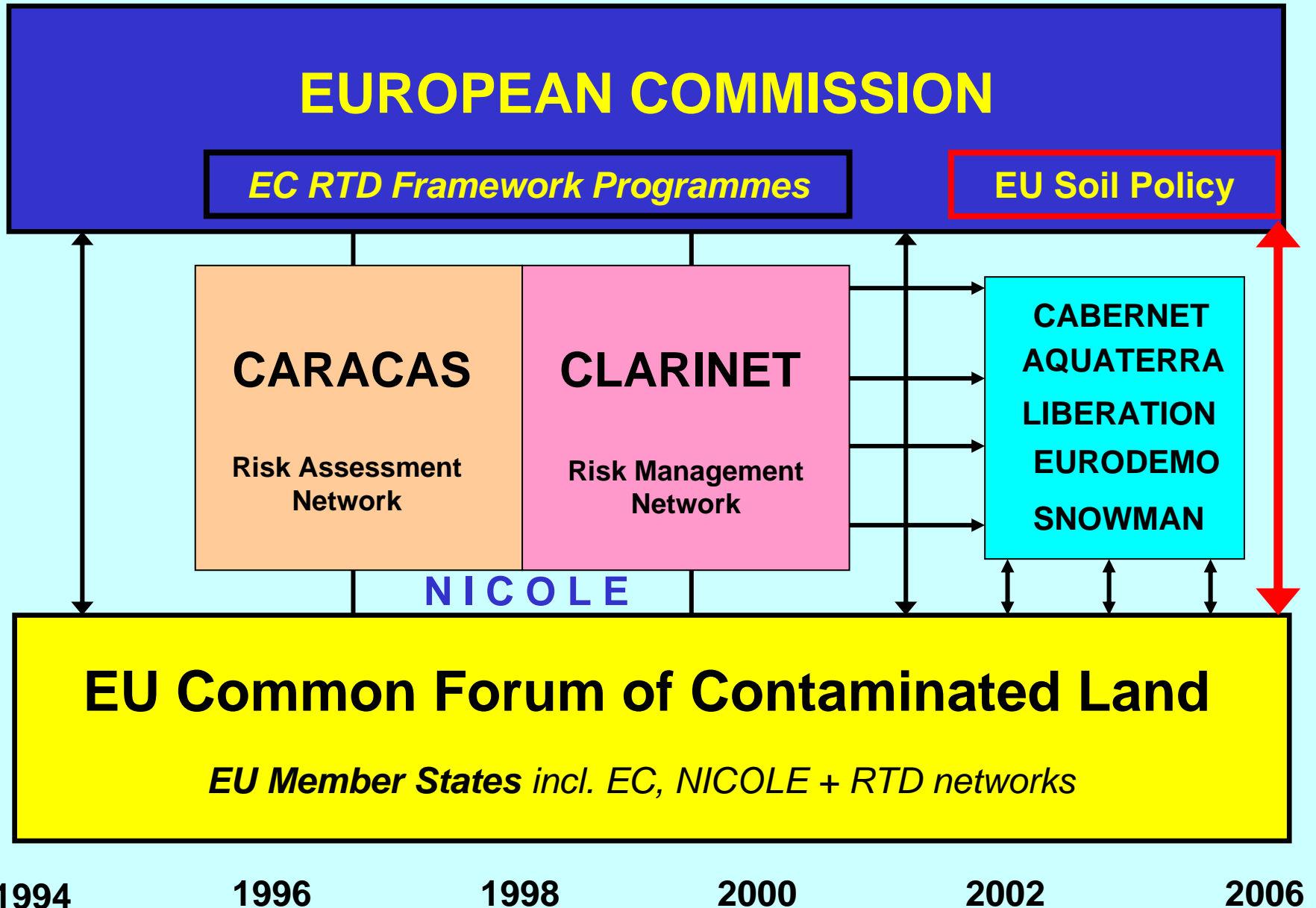
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→ **EU Soil Policy, EU GWD, EU Env. Liability**

# ROADMAP of EU Networking



# "THE SITE MANAGEMENT JOURNEY"

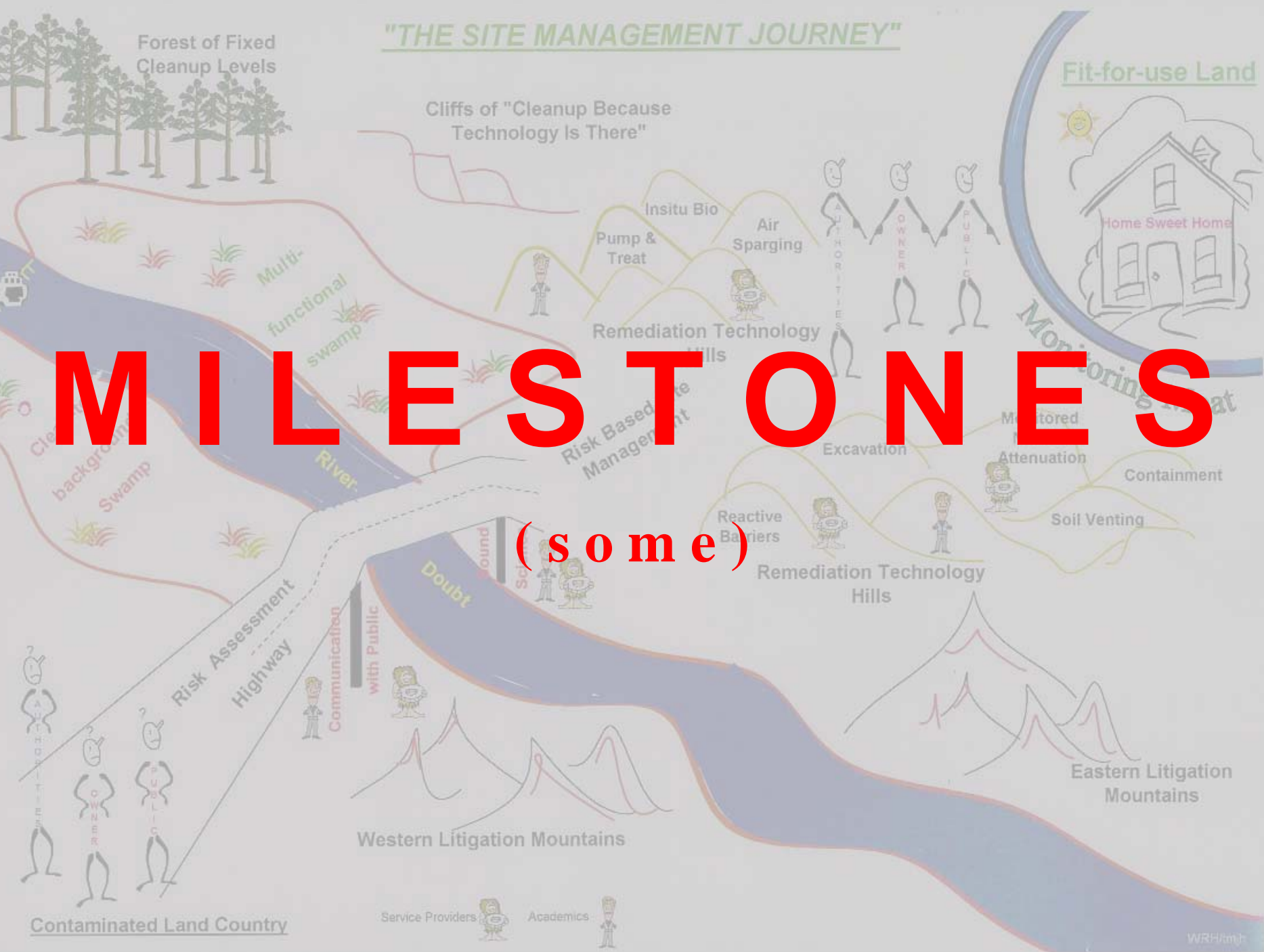
Forest of Fixed Cleanup Levels

Cliffs of "Cleanup Because Technology Is There"

Fit-for-use Land

# MILESTONES

(some)



Contaminated Land Country

Service Providers

Academics

# Risk Assessment for Contaminated Sites in Europe



## Volume 1 Scientific Basis

# Risk Assessment for Contaminated Sites in Europe



## Volume 2 Policy Frameworks



**Prof. Colin Ferguson  
was chairman of the  
CARACAS Scientific  
Advisory Board.**

**His inspiring personality  
was fundamental in  
developing the European  
partnership and to ensure  
an effective outcome.**



## FINAL CLARINET RESULTS

[Risk Based Land Management Report](#)



[Brownfields and Redevelopment of Urban Areas](#)



[Remediation of Contaminated Land Technology Implementation in Europe](#)



- [Variation in calculated human exposure. Comparison of calculations with seven European human exposure models](#)
- Special Edition on Land Contamination and Reclamation: [The Sustainable Management and Remediation of Contaminated Land](#)

[Online Order Form for Reports](#)

### This Website ...

... provides actual and comprehensive information related to contaminated land management in Europe

... is addressed to decision makers and stakeholders such as researchers and academics, policy experts and problem holders, etc

... aims to stimulate responsible and integrative approaches towards effective solution of contaminated land related problems in Europe

### This Website provides information about ...

#### [The European CLARINET Network](#)

What are our goals? How do we want to achieve them? Who can provide further information? [Conclusions and recommendations!](#)

#### [Research & Development](#)

Which RTD Programmes are relevant for contaminated land in Europe? How to participate in the European Commissions 6<sup>th</sup> RTD Framework Programme? What support can CLARINET provide to the research community?



HOME

LIBRARY LINKS

**CLARINET WEBSITE**



FINAL CLARINET RES...

[Management and Remediation of Contaminated Land](#)

[Risk Based Land Management Report](#)

[Online Order Form for Reports](#)

**This Website ...**

provides actual and comprehensive information related to

**http://www.clarinet.at**

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[The European CLARINET Network](#)

What are our goals? How do we want to achieve them? Who can provide further information? Conclusions and recommendations!

[Remediation of Contaminated Land Technology Implementation in Europe](#)

**Contaminated Land in Europe**

# CARACAS

CONCERTED ACTION ON RISK ASSESSMENT FOR  
CONTAMINATED SITES IN THE EUROPEAN UNION



Network for Industrially  
Contaminated Land in Europe

Concerted Actions of the EC Environment and Climate  
Research and Development Programme

Joint Statement - October 1997

Past and present human activities which introduce contaminants to the soil and groundwater have resulted in some 750,000 sites across Europe with suspected contamination. Some of these sites may endanger water resources, ecosystems, and/or human health.

Better methods are needed for assessing the likely impacts on humans and the environment:

- to confirm that sites are fit for their current or intended uses
- to guide the remedial actions needed to ensure fitness for use and a reduced burden of aftercare for future generations.

## Towards a Better Future:

*Establishing Fitness for Use and Sustainable Development  
of Contaminated Land in Europe*

Land is "fit for use" when it can be used for a particular purpose without posing unacceptable risk to human health or the environment. Uncertainties about the nature and significance of chemical contamination can be a major stumbling block hindering sustainable development, and increasing pressures on greenfield sites. Without more cost-effective methods for assessing fitness for use, large sums of government and industry money may be spent on sites that cause little environmental impact, while other sites which are in greater need of attention may not receive it.

There are many areas where significant improvements in the science base would greatly reduce the cost and increase the certainty of fitness-for-use assessments. Both Concerted Actions, CARACAS (authority led) and NICOLE (industry led), identified very similar areas which would benefit from further Research and Development initiatives as described in this joint statement.

Together the two programmes are working to provide a vision, and identify the means, by which risk assessment and management can be applied effectively to ensure the safe use of these lands to protect the environment.

Effective solutions require:

- the close collaboration of scientists and engineers, industry problem holders, policy makers, technology developers, academics, and research programme planners
- focused and transparent approaches that are economically viable.

The results will be important to us all for:

- a safe and attractive environment
- sustainable reuse of former industrial areas for homes, businesses and leisure areas etc.
- effective and timely solutions at a viable cost to society.

Inside  
Research Needs

Back page  
CARACAS and NICOLE



SENSPOL Sensors for Monitoring Water Pollution from  
Contaminated Land, Landfills and Sediments



Concerted Actions of the EC Environment and  
Climate Research and Development Programme

Joint Statement - September 2000

*The management of the water cycle according to the principles of a sustainable development will preserve water resources for future generations. Can we neglect legacies from the past when heading for a more sustainable future?*

## MANAGEMENT OF CONTAMINATED LAND FOR THE PROTECTION OF WATER RESOURCES

A COMMON POSITION OF THE EC CONCERTED ACTIONS  
CLARINET – ETCA – SENSPOL  
and the network NICOLE

*We are all dependent on water, - ecologically and economically.*

A long history of environmental pollution is archived in soils and sediments. Water transfer through too many contaminated sites across Europe results in unacceptable levels of contaminants leaching into the groundwater. Former industrial areas, contaminated agricultural soils, contaminated sediments and landfills are already causing a diversity of serious problems for land-use, groundwater (a major source of drinking water) and terrestrial and aquatic ecosystems. Land-use changes and climatic changes may turn more of the sinks of pollution that are present in soils and sediments into new sources.

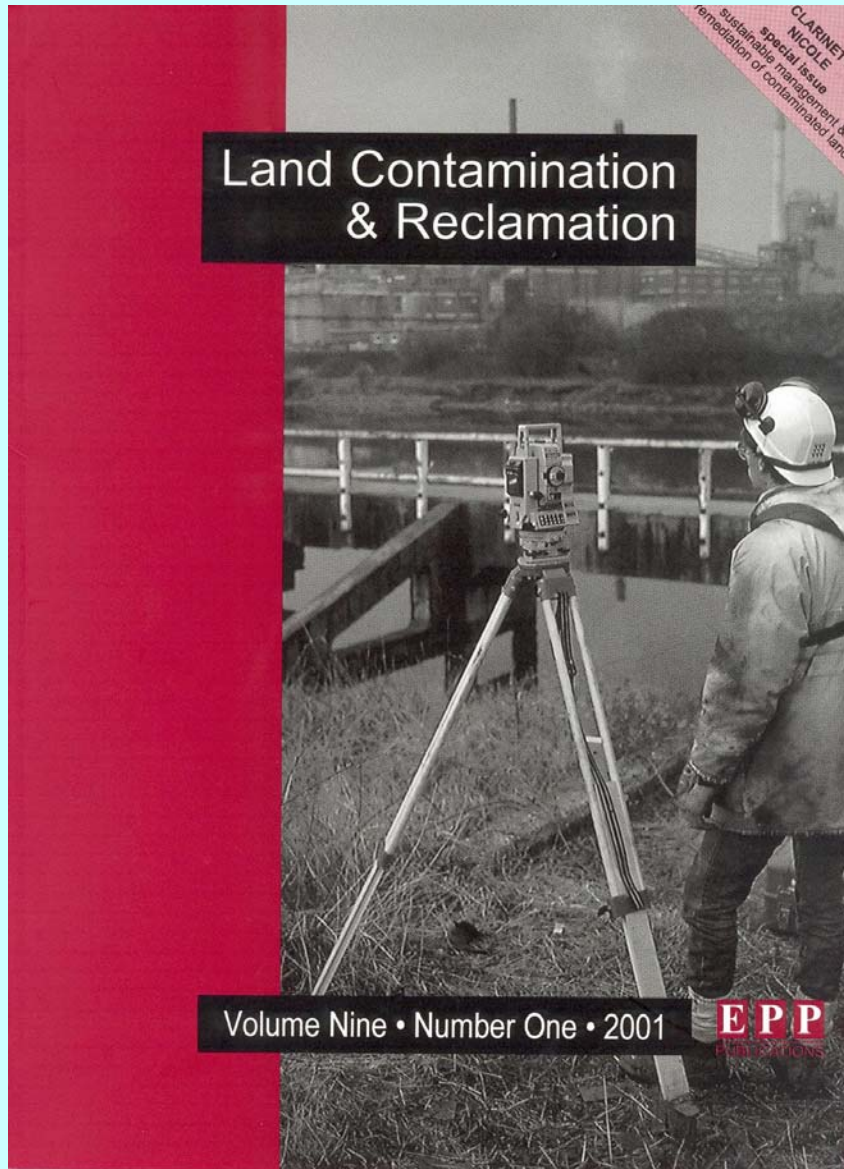
On a technical level, following issues have to be addressed to solve perceived problems:

- prevention and reduction of pollution originating from contaminated sites, waste disposal sites and sediments,
- prevention and reduction of diffuse pollution originating from land uses, land use changes and climatic changes.

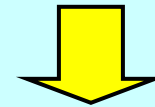
The perceived problems can only be solved by addressing land-uses and functions and promoting sustainable use of land, including contaminated sites. Solutions require interdisciplinary approaches that must fit in a socio-economic context, which requires a specific management framework.

Inside

A management framework for sustainable solutions: Research and Development needs



**CLARINET & NICOLE  
Key Note Papers  
published in EPP 2001**



**Recommendations  
towards Risk-based  
Land Management**

# "THE SITE MANAGEMENT JOURNEY"

Forest of Fixed Cleanup Levels

Cliffs of "Cleanup Because Technology Is There"

Fit-for-use Land

Home Sweet Home

Monitoring & Maintenance

# LOOKING FORWARD



Contaminated Land Country

Service Providers Academics

WRH/mjh

# FUTURE PERSPECTIVES

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**stronger interaction: *spatial planning - water protection – environm. management***

**3 elements for Risk Based Land Management:**

- Fitness for use
  - Protection of the environment
  - Reduction of aftercare
- } **suitable for use !**



**EU Soil Framework Directive**

# **“Harmonization Prozess“ in Contaminated Land Management**

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- **„soft-harmonization“ = co-operation and information exchange between all stakeholders**
- **harmonise pure scientific/technological aspects**
- **retain appropriate national and local approaches**
- **„hard-harmonization“ = threat of imbalance in actual levels of protection under different circumstances**



Environment 2010:

# Our Future, Our Choice



6th EU **Environment** Action Programme

2001-2010



European Commission

**GOOD LUCK**

**for the next 10 years**

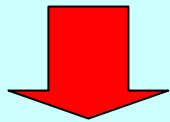


# Statements

- Industry → site (RBCA), shorter term perspective
- Regulator → regional (RBLM), longer term persp.
- Problems with industrial sites → small part of regulator problems

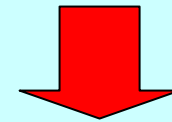
# Two Policy Perspectives

**Environmental  
Problem**



**endanger  
human/ecological health**

**Spatial Planning  
Problem**



**endanger  
economical growth**