"Capacity Building and Strengthening Institutional Arrangement"

Workshop: "Hazardous Substances and Wastes"

Risk Assessment and Risk Management of Contaminated Sites in Europe: Networks, Scientific Basis, National Policies

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1. Networks

2. Scientific Basis

3. National Policies

1. Networks   European networks on Contaminated Sites

In the last 13 years Member States have compared their national risk assessment and risk mangement practices and respective policies within the following initiatives:

- **Common Forum** (since 1994) www.commonforum.eu

   EU network of Member State representatives

- **CARACAS** (1996-1998) www.caracas.at

"Concerted Action for Risk Assessment of Contaminated Sites in Europe"

   2 Volumes : Scientific Basis + National Policies

- **NICOLE** (since 1996) www.nicole.org

"Network for Industrially Contaminated Land in Europe"

Workshops + Projects coordination

- **CLARINET** (1999-2001) www.clarinet.at

"Contaminated Land Rehabilitation Network for Environmental Technologies"

Concept for Risk Based Land Management

1. Networks

Common Forum on Contaminated land in the European Union

- The objectives of Common Forum are to develop strategies for the management of contaminated sites and for land recycling with respect to "sustainable resource protection" for contaminated land and groundwater.

- It was initiated in 1994. In 1996 it promoted the EU funded concerted action on risk assessment for contaminated land CARACAS.

- It is presently a formal group of country representatives from national government and agencies in EU Member States. It is recognised by the EC as an important "stakeholder network".

- Common Forum holds regular meetings to discuss important and current issues in these fields. Common views are developed and expertise is offered to the European Commission, relevant stakeholder networks and EU research projects.

www.commonforum.eu

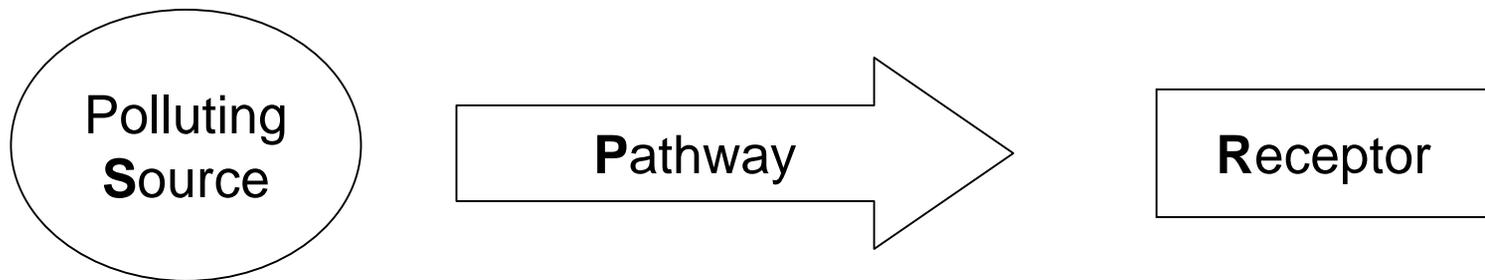# 2. Scientific Basis

Risk Assessment: CARACAS

- Concerted Action involving 16 European countries
- Volumes "Risk Assessment for Contaminated Sites in Europe":
  - Volume 1 - Scientific Basis
  - Volume 2 - Policy Frameworks

www.caracas.at

Risk Assessment for Contaminated Sites in Europe

Volume 1 Scientific Basis

A report prepared as part of the Concerted Action on Risk Assessment for Contaminated Sites in the European Union (CARACAS). This programme was funded by the European Commission under the Environment and Climate Programme and coordinated by the German Umweltbundesamt.

LQM Press
Nottingham

2. Scientific Basis

Risk assessment principles

Polluting **S**ource → **P**athway → **R**eceptor

A risk to a Receptor may exists when a pollutant linkage S-P-R exists and the Receptor may be then exposed to contamination

2. Scientific Basis

Risk assessment approaches

Risks at contaminated sites are generally assessed according to tiered (step-wise) procedures:

- generic and conservative assumptions are adopted for screening
- site specific data for decisions on:
  - actual contamination status
  - remedial actions
  - remedial (clean-up) objectives

Risks are assessed with respect to:

- Human health
- Ecosystems health

2. Scientific Basis

Tiered Risk Assessment approach

Screening Risk Assessment

Conservative and generic assumptions

Level I

Site specific information

Level II

derive
Soil/groundwater Screening Values

then

Compare soil/gw concentration
at site against Screening Values

when

exceeded

Site specific Risk Assessment
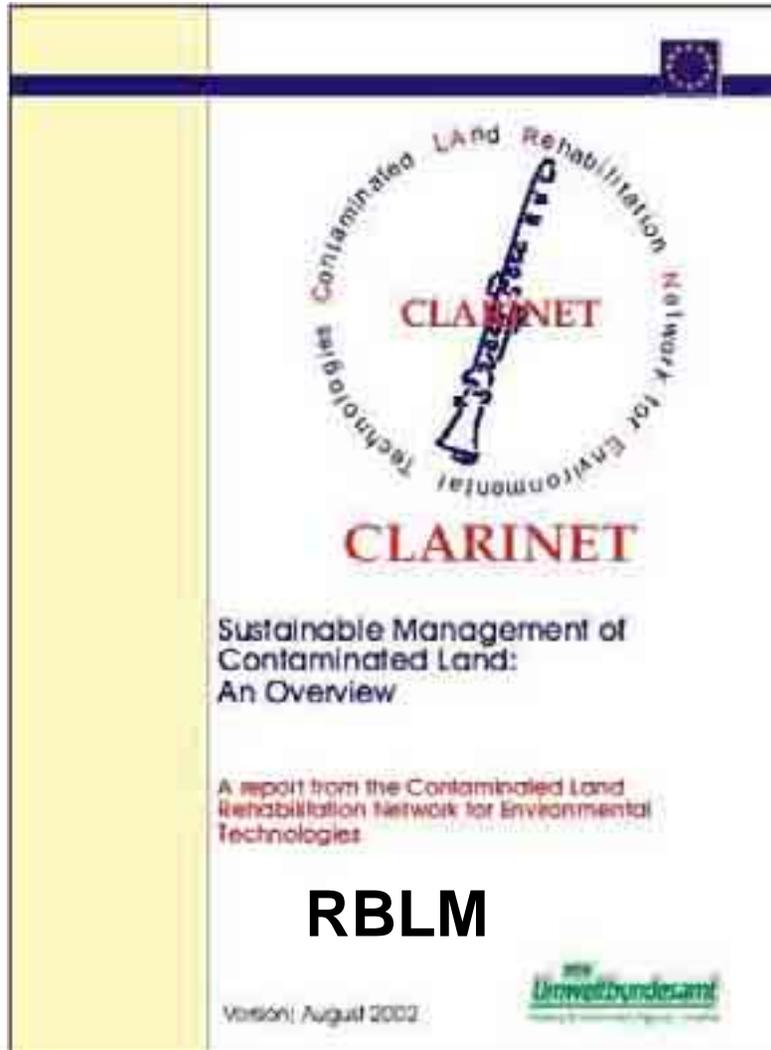
decide

Acceptability of Risk
Clean-up objectives for the site

2. Scientific Basis

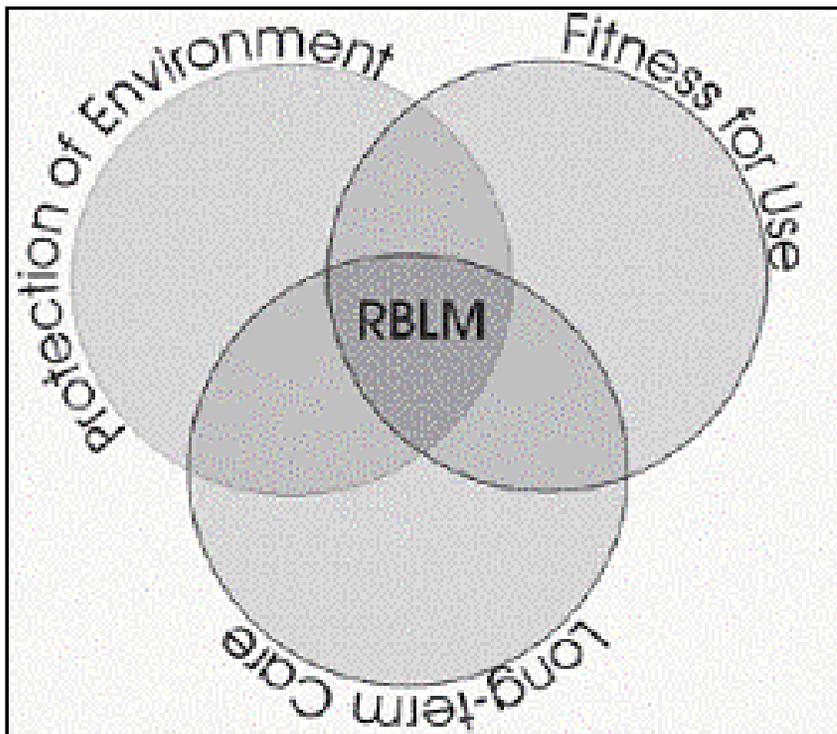**Risk Management: CLARINET**

RBLM

- Concerted Action on Contaminated Land Rehabilitation involving 16 countries.

- Developed the concept for Risk Based Land Management (RBLM).

- Several volumes on the management of contaminated sites were published

www.clarinet.at

2. Scientific Basis
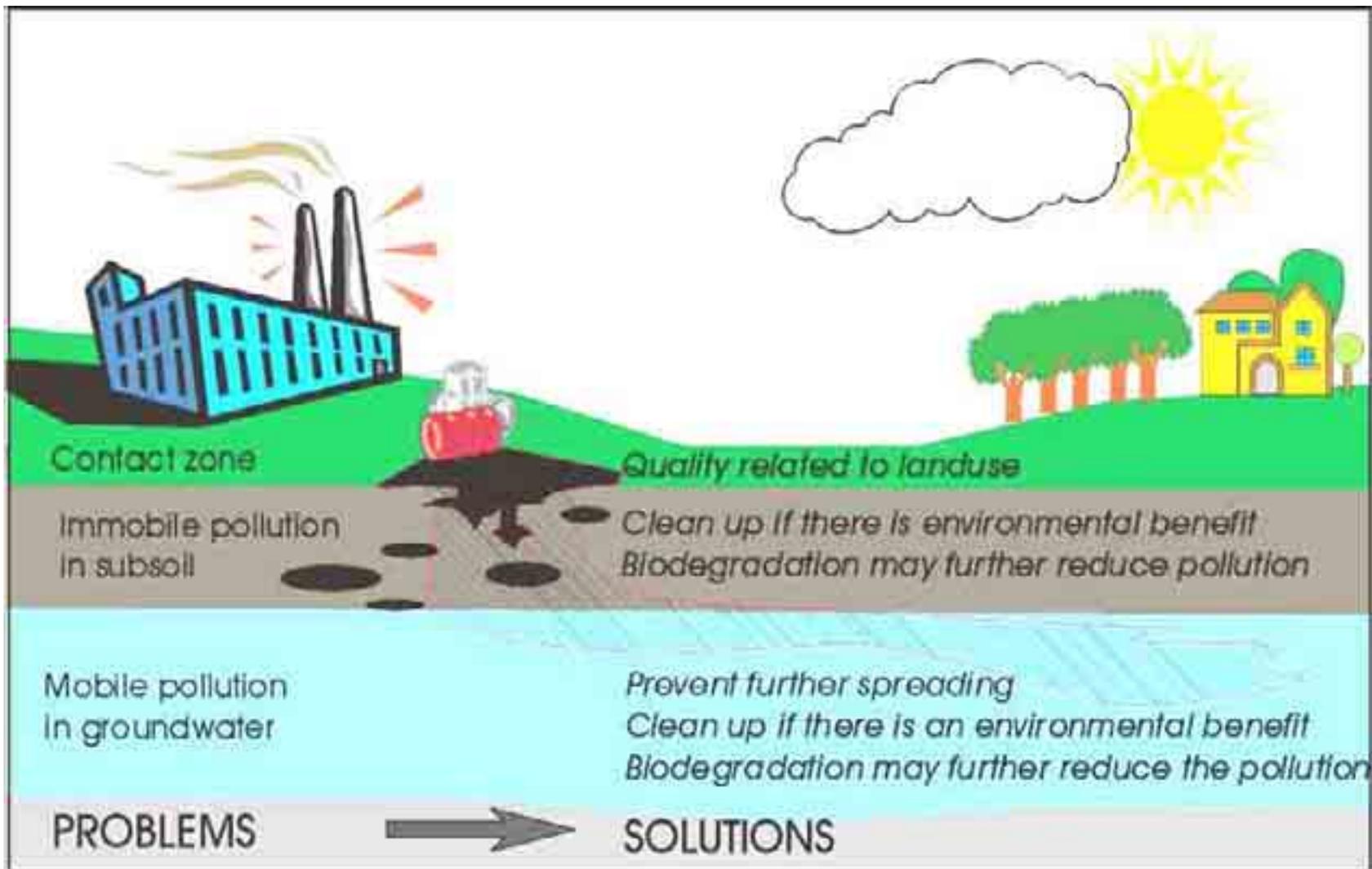
Risk Based Land Management: RBLM

Objectives, timeframe and management strategies:

• Fitness for use of site through risk reduction

• Protection of environmental resources

• Long-term care

**Applies mostly to so-called "historic contamination",
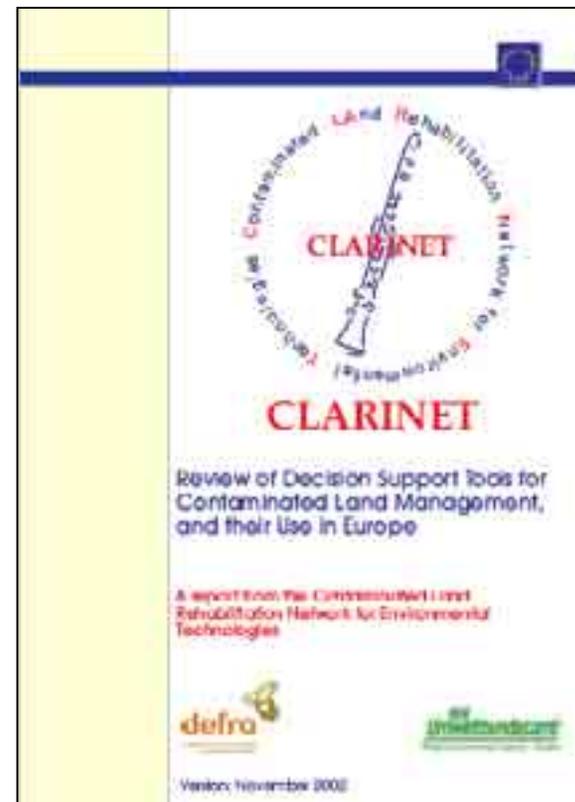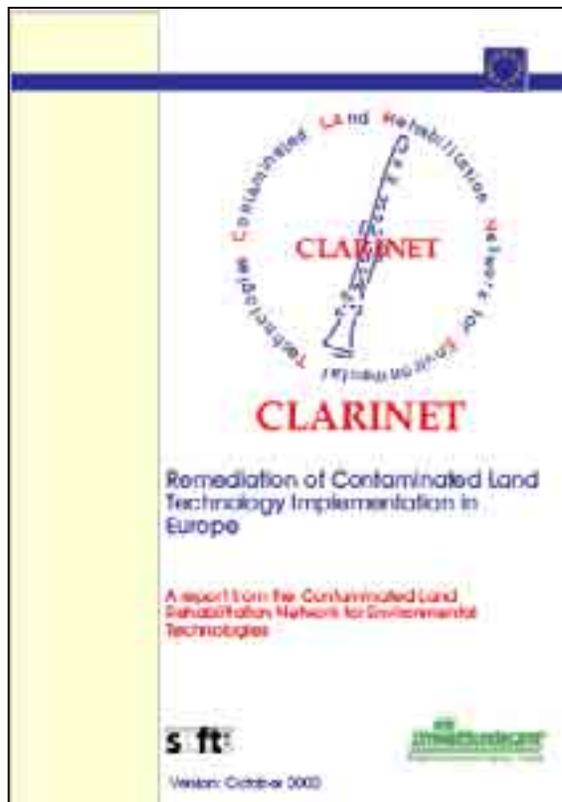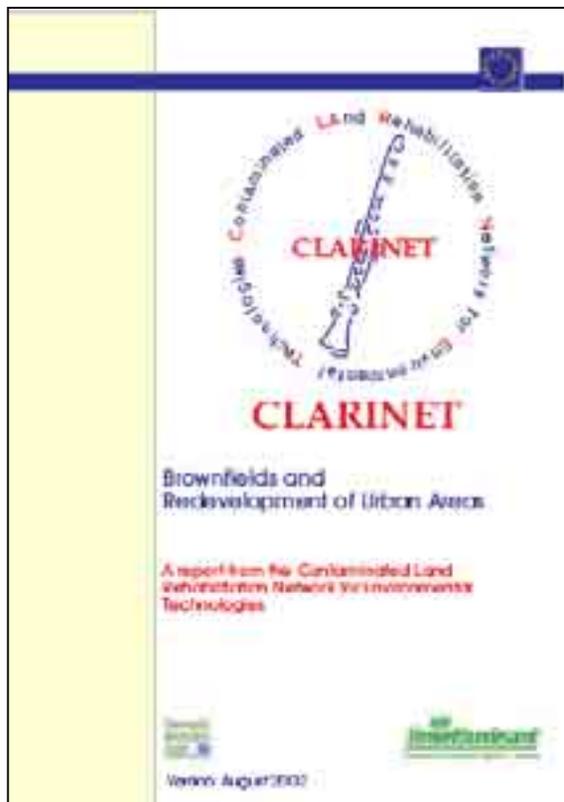i.e. legacy from past industrial and economic activities**

2. Scientific Basis

RBLM: risk reduction

Contact zone — Quality related to landuse

Immobile pollution in subsoil — Clean up if there is environmental benefit / Biodegradation may further reduce pollution

Mobile pollution in groundwater — Prevent further spreading / Clean up if there is an environmental benefit / Biodegradation may further reduce the pollution

PROBLEMS ➝ SOLUTIONS

2. Scientific Basis

Other CLARINET products

www.clarinet.at

3. National Policies

SedNet

- Management of contaminated dredged sediments: problem of authorities responsible for navigable waterways and port managers:
  - Impacts on water ecological quality
  - Relocation problems for large sediment volumes
- Contributions to pollution along river basin:
  - From diffuse and local sources
  - From river floods
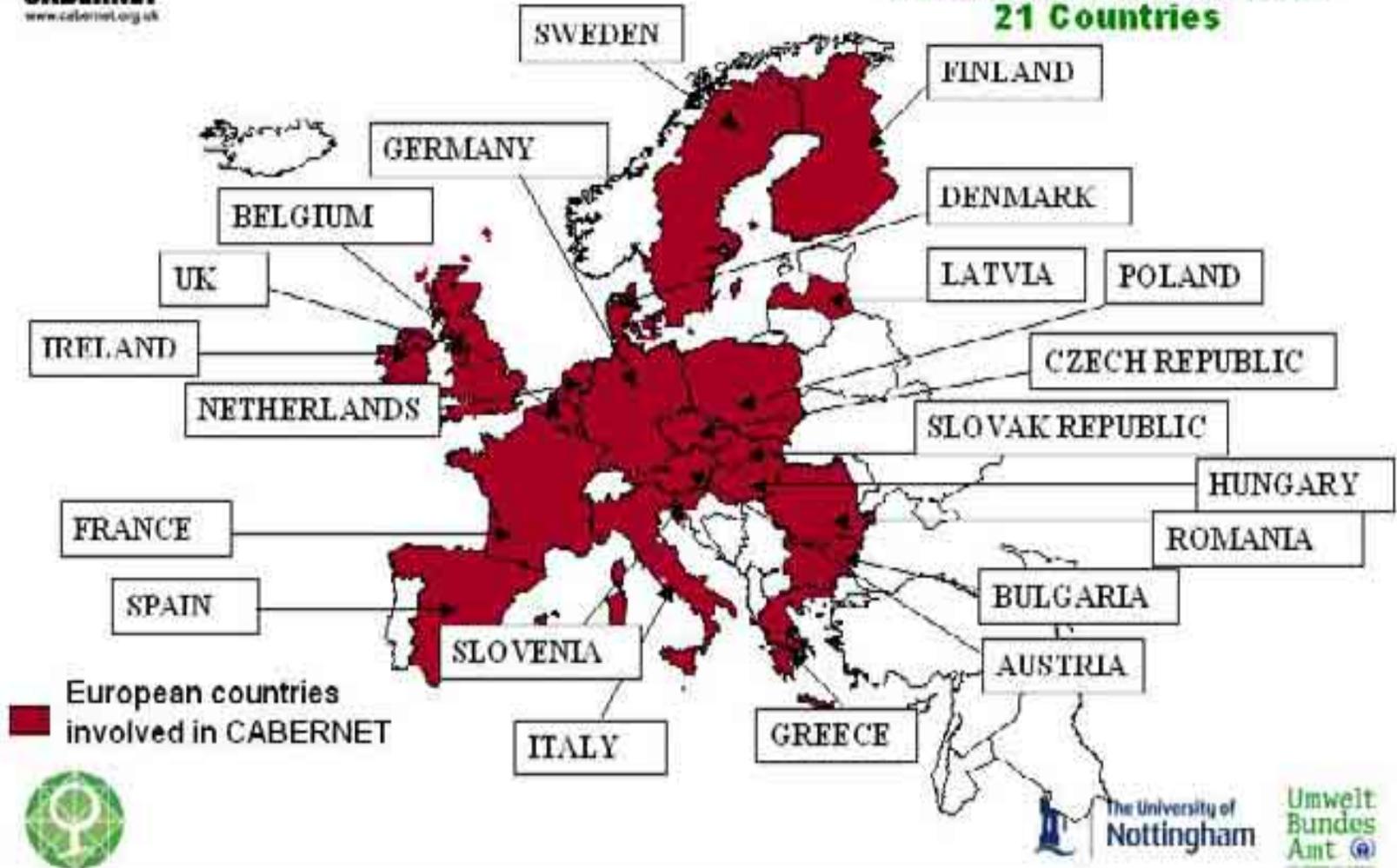 - Polluter pays principle far from being applied

3. National Policies

Concerted Action on Brownfield and Economic Regeneration Network

- A Multi-Stakeholder Network:
  - Raising awareness of solutions to key problems
  - Stimulates debate, particularly relating current practice to future aspirations via research needs
- vision is enhanced rehabilitation of brownfield sites to support sustainable regeneration
- facilitate value-driven sustainable brownfield regeneration
- raise profile of brownfield issues at local, national and European level

www.cabernet.org.uk

3. National Policies

What are "Brownfields"?

- "sites that have been affected by the former uses of the site and surrounding land;

- are derelict and underused;

- may have real or perceived contamination problems;

- are mainly in developed urban areas;

- and require intervention to bring them back to beneficial use"

EUGRIS Portal for Soil and Water management in Europe

Terms & conditions for use

☒ comprehensive collation of European contaminated land and groundwater information

☒ guided, scaleable and holistic approach to providing information

☒ linkage of stakeholder networks and national initiatives with similar interests

www.eugris.info

Sustainable Management Soil and Groundwater

Contamination

Point ⟷ Diffuse

Waste 2007 ?

Erosion   Salinity

Climate

Soil and Groundwater

Sealing

Pollutants   Scope of work EUGRIS

Desertification

EUGRIS as kick-off in a modular European Information Network