



STATE OF THE ART IN CONTAMINATED LAND MANAGEMENT – TOWARDS THE 4th GENERATION POLICY FRAMEWORK

Dominique DARMENDRAIL,
Dietmar MÜLLER-GRABHERR

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ICCL
international
committee on
contaminated
land



ICCL / Common Forum networks



- ◆ Network of contaminated land policy experts and advisors dealing with contaminated land management:
 - International scale (since 1993), Europe (since 1994)

- ◆ Mission:
 - Being a platform for exchange of knowledge and experiences, for initiating and following-up of international projects among members,
 - Establishing a discussion platform on policy, research, technical and managerial concepts of contaminated land,

Legislation applying to Contaminated Land Management

- ◆ Two levels of legislation:
 - The National / Regional level
 - The European Union level

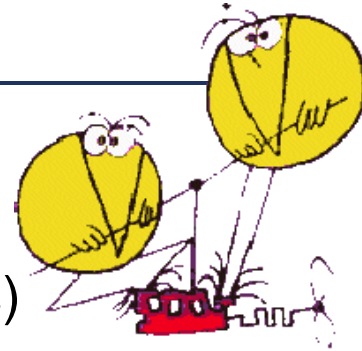


Evolution of contaminated land policies at national level

- ◆ **First generation: the early days 1980**
 - Drastic risk control, focus on soil contamination
 - systematic approaches (protocols, national inventories)

- ◆ **Second generation: contaminated land risk assessment 1990**
 - Possibilities for tailor-made approaches with cost effective investigations
 - Landuse becomes very important in assessment and decision making

- ◆ **Third generation: Risk Based Land Management and solution design 2000**
 - Integration with spatial planning, water management, socio-economy
 - Economic development vs. protection of Environment & HH



Contaminated Land Management

- **Several dimensions / a single framework**
 - **With legal, technical, financial, organisational tools**
 - Preventing new pollution – Impact Assessment of new projects
 - Operating industrial sites:
 - Preventing Accident / special infrastructures, warning systems, monitoring
 - Reducing emissions / Use of BATNEEC (processing, filtering)
 - Polluter pays principle
 - Act as soon as emission.
 - Legacy pollution:
 - Risk based approach – from RBLM to sustainable land management
 - Use a tiered approach using cost-benefits approach
 - Combining and balancing the three pillars of sustainable remediation

Harmonisation or Common Ground?

◆ Technical level:

- Tool box for Risk Assessment, with several models, different levels of details
- Common protocol for choosing the appropriate models
- Common set of exposure factors, reference doses?
- Recommendations for i.e. use of safety factors? Taking into consideration background levels?
- Smart combination of models and measurements needed!!!

◆ Political level:

- Acceptable risk for different land uses?
- Targets to be protected (Human Health, Ecosystems? Ground water, Surface waters, Others?)
- Substances to be covered / excluded
- Risk management tools (e.g. restriction of use)

Challenges faced by attending countries

- ◆ Preventing new pollution !!!!
- ◆ Identify the « challenge »:
 - No common definition (CS / Brownfield): Does it matter?
 - Different registers with different objectives (preventing, communicating)
- ◆ Common ground for assessing:
 - Risk-based Assessment and Management
 - Via precautionary thresholds/guidance values or site-specific approach?
- ◆ Remediation & monitoring technologies
 - Lot of developments since the last 20 years
 - « Specials » - sensitive areas, fast growing environments

Common remaining challenges - Situations

- ◆ Brownfields, sediments and Mining areas
- ◆ Emerging contaminants:
 - What we expected (PFOS, pharmaceuticals, phthalates, etc.)
 - What was mentioned by countries (Pb, BaP, asbestos, ...) – Emerging issues
- ◆ Hg (Minamata Convention)?
- ◆ Diffuse pollution

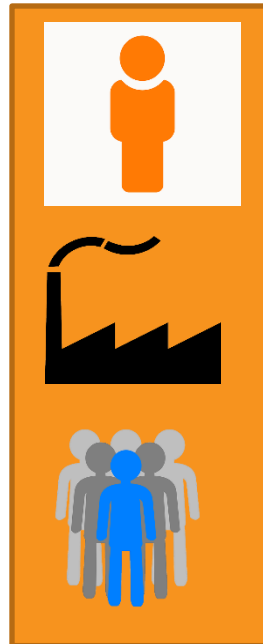
Some remaining challenges - Processes

◆ Responsibilities:

- Polluter Pays Principle - remaining
- Preventing new pollution, new orphan sites
 - The challenge of parent companies / corporates
- Transferring liabilities?

◆ Financing CLM:

- Public budget shrinking
- Regulatory instruments attached to a person /company, the land, a sector
- Innovative funding mechanisms for tackling all situations (insurance, financial assurance, product taxes, ...)



Common remaining challenges – Others

◆ Connecting to land planning / communities

- Risk communication

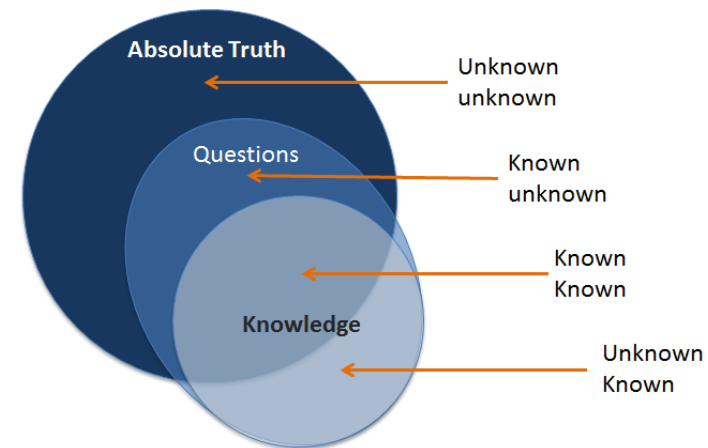
◆ Sources of information

◆ Capacity Building

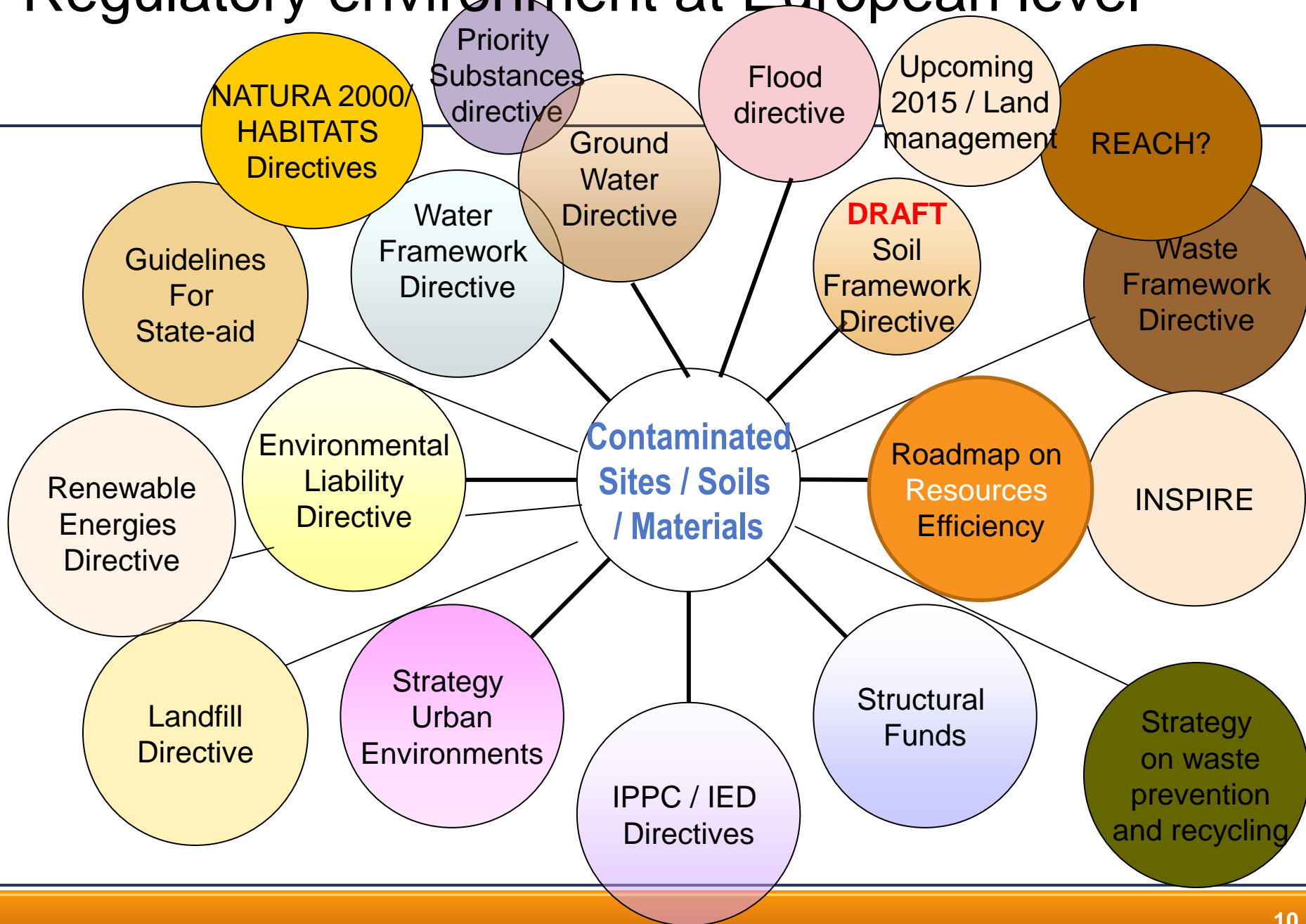
- With neighbours

◆ Remaining Gaps

- Emerging contaminants & Mixtures / Cocktails
- Dealing with uncertainties (Delineation of sources, plumes) - HIT THE GOOD CAUSES



Regulatory environment at European level



the 2006 Soil Protection Strategy

◆ 4 pillars:

- Framework legislation with protection and sustainable use of soil
 - Soil Protection Directive proposal
- Integration of soil protection into other policies
 - Environmental Liability & Industrial emissions Directives – Implementation phase
 - Revision of the Sewage Sludge and Wastes Directives
 - INSPIRE / format for environmental reporting
 - Soil Provisions in the Renewable Energies Directive
 - Roadmap on Resource Efficiency (*policies take into account their direct and indirect impact on land use in the EU*)
 - Biodiversity, Climate Change, Rural development Plans, etc.
- Closing the recognised knowledge gap by Community and national research programmes;
- Increasing public awareness of the need to protect soil

New EC initiative on Soil / Land

- ◆ Soil Protection Directive proposal / Withdrawn in May 2014
- ◆ 7th EAP:
 - *how soil quality issues could be addressed using a targeted and proportionate risk-based approach within a binding legal framework*
- ◆ UN Sustainable Development conference:
 - *need for urgent action to reverse land degradation and to achieve a land-degradation neutral world in the context of sustainable development*
- ◆ European Soil Partnership – since 2014
- ◆ Land Communication in 2016?

TYPES OF SITUATION FACED

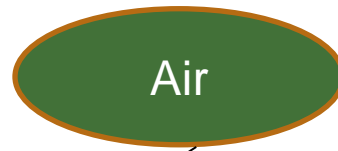
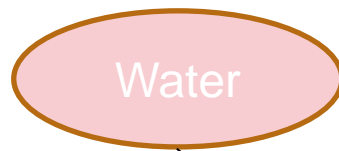
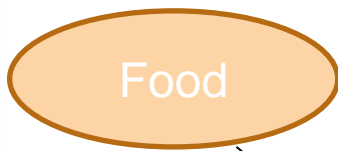
◆ Suspected land:
is it a problem?
Is it risky?



◆ Are the impacts
caused by the
operating site
acceptable?

◆ Is the future
redevelopment
project feasible
on this particular
site?

◆ Site closure: What
should I do for
regenerating the
land?



Is the surrounding population exposed to unacceptable risks?

- ◆ Suspected site: is it a problem? Is it risky?
- Is the future redevelopment project feasible on this particular site?
- Is an Area approach more suitable (cumulative)?



- Are the operating site impacts acceptable?
- Are the industrial area impacts acceptable?
- Site closure: What should be done for regenerating the land?

Will the new project have an impact (BATNEEC use, best practices for operation, controls)?
 Is there a potential cumulative impact with other sources?

Needs of evolution to meet new challenges

4th generation of policy framework

- ◆ Sustainable use of natural resources:
 - consumption of resources should not exceed the carrying capacity of the environment,
 - de-coupling of resource use and waste generation from economic growth.
- ◆ ‘Verification’ of environmental technologies (eco-efficient, evaluated against ‘indicators’)
- ◆ Life cycle thinking integrated to sector policies
- ◆ EU climate and energy targets (“20-20-20”-targets): highly energy-efficient, low carbon economy.

Contaminated Land Management

A new paradigm

- ◆ **Risk Assessment:** investigating and understanding environmental impacts and risks taking a tiered approach
- ◆ **Land Management:** designing and implementing actions to *reduce negative consequences* and to *balance benefits*

WATCH OUT:

- ◆ **not trading unacceptable risks against other management objectives & aspects**

What's common? What's different?

	Risk	Sustainability
origin / use	economy / science	ecology / policy
based on ...	mental construct	ethical construct
objective	transparency	fairness
important	<ul style="list-style-type: none"> • single target • accountability • effectiveness 	<ul style="list-style-type: none"> • multi-objective • interdependency • efficiency
question	Should we act?	How can we act?
support to	better decisions	better action
strategy	prevent or limit	synergy

What we need to Enhance

MANAGING “LAND” (soil & groundwater)

- ◆ matching human needs to natural resources and capacities
- ◆ crossing geographical and time scales (site to globe and back; short-, mid- and long-term)
- ◆ promoting synergies, avoiding irreversibility
- ◆ balancing the three pillars of sustainable land management

Example 1: Action Scale issues

- ◆ At site scale (if it is isolated, ...),
- ◆ At an impacted area due to site(s) emissions – even when authorised by a operation permit (low punctual incremental on a long term).
- ◆ At community scale, in case of existence of several contaminated sites or in case of redevelopment project leading to land use change,
- ◆ At the scale of a catchment or even an entire river basin, if many contaminated sites are impacting the same water resources.

Example 2: time frame issues

- ◆ Time vs specific impacts :
 - If emergency or safety measures are considered as necessary when the risks are demonstrated / immediate action or at least on the short-term.
- ◆ Acting on soil and groundwater : Consider the transfer time in the unsaturated zone and in the aquifer.
- ◆ Timeframe of the redevelopment project or even of the urban planning in general.
- ◆ Time needed for assessing the efficiency of the actions taken at the relevant geographical scale.

Sustainability in Land Management

◆ Environment protection

- No problem shifting
- Protecting Environment and Health against risks on the long term
- Reducing Emissions and footprints in land remediation and management (water, energy, soil & land, ...)

◆ Social

- Fostering local employment opportunities in communities where sites are reclaimed and reused.
- Integrating reuse in land development needs
- Ethics & Equity

◆ Economics

- Decrease Direct costs & Increase benefits
- Rising property values
- Project lifespan & flexibility

Additional Principles

- ◆ **Fitness for use:** to ensure safe use or reuse of contaminated sites by preventing unacceptable risks for citizens and the environment
- ◆ **Stand-still:** no further degradation of natural resources (soil and groundwater)
- ◆ **Supporting sustainable development:** to balance benefits at an appropriate scale and time frame
- ◆ **Transparency and fairness:** to establish well known assessment and decision criteria within appropriate consultation processes facilitating possible consensus of involved stakeholders

CF / NICOLE Joint Position Paper



NICOLE

Network for Industrially Contaminated Land in Europe



Common Forum



NICOLE

Network for Industrially Contaminated Land in Europe



Common Forum



Pictures
Courtesy of WSP and National Grid

Risk-Informed and Sustainable Remediation

The COMMON FORUM on Contaminated Land, initiated in 1994, is a network of contaminated land policy makers and advisors from national ministries in European Union Member States and European Free Trade Association countries. The objectives of COMMON FORUM are to develop strategies for the management and treatment of contaminated sites and for land recycling with respect to "sustainable resource protection" for contaminated land and groundwater.

www.commonforum.eu

NICOLE is a network for the stimulation, dissemination and exchange of knowledge about all aspects of industrially contaminated land. Its 125 members of 15 European countries come from industrial companies and trade organisations (problem holders), service providers / technology developers, universities and independent research organisations (problem solvers) and governmental organisations (policy makers).

The network started in February 1996 as a concerted action under the 4th Framework Programme of the European Community. Since February 1999, NICOLE has been self supporting and is financed by the fees of its members.

www.nicole.org

Joint Position Statement by

NICOLE and COMMON FORUM

9 June 2013

Available in:
English,
Dutch,
French,
Italian,
German,
Portuguese,
Spanish,
Serb, Danish

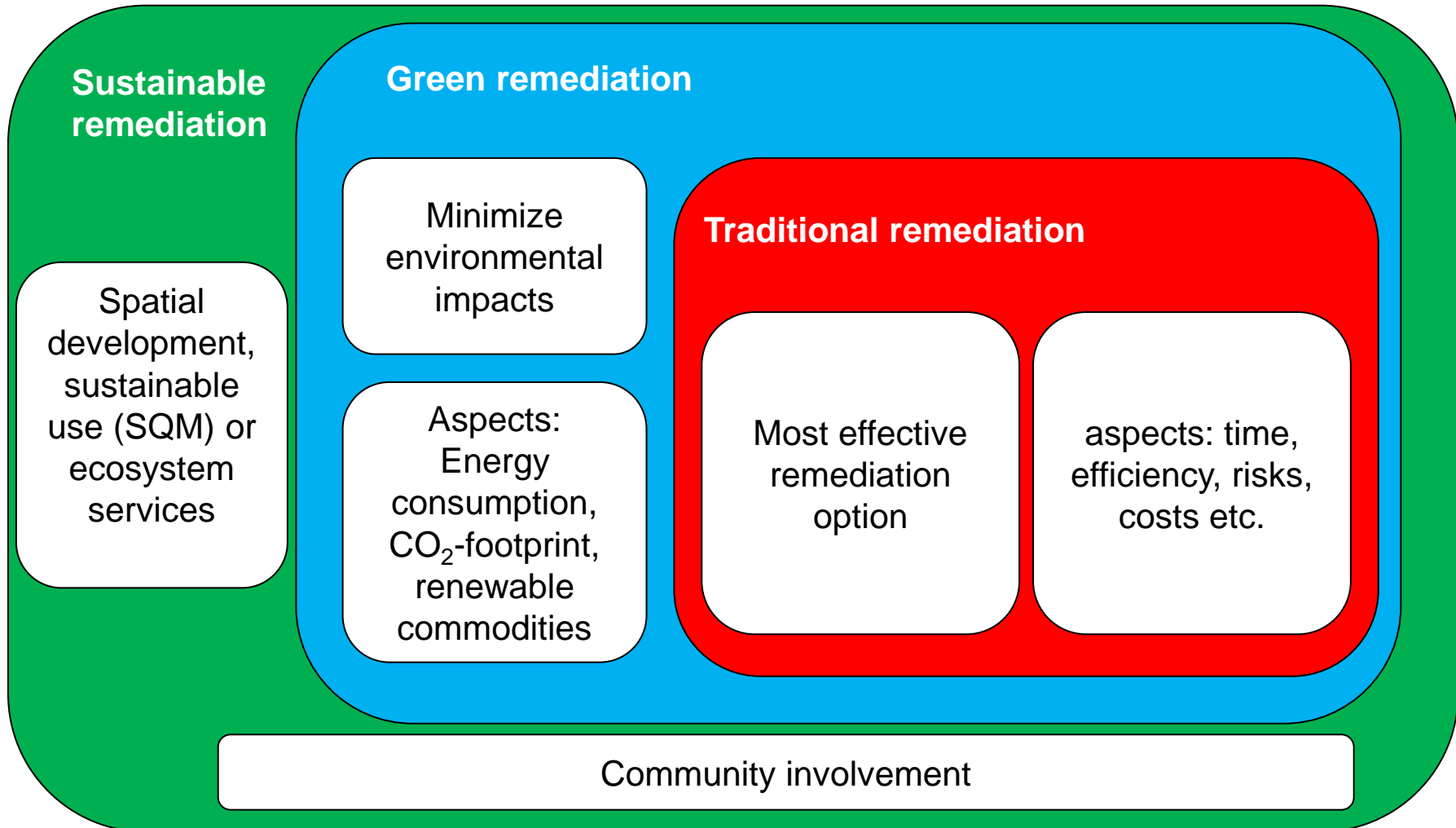
Available on
networks
websites

SR Key Messages 1

- ◆ Protection of human health and the environment is paramount
- ◆ SR seeks to maximise the overall benefit through a balanced and transparent decision-making process
- ◆ SR principles embody:
 - Importance of contributing to sustainable development
 - Efficient use of environmental, social and economic resources; better/balanced remediation solutions, and enhanced land management
- ◆ Sustainability means different things to different people - stakeholder engagement is crucial to define project-specific objectives and collate feedback

SR Key Messages 2

- ◆ Integration of the elements of sustainability in a balanced and proportional way, within specific legal and policy contexts, should begin as early as possible (when the sustainability gain is greatest), but continue throughout the life of a project
- ◆ Good practice SR, drawing from the work of CLARINET consistent with existing risk-informed con-land management practice, recommended for all future practice is described in current guidelines:
 - SuRF-UK Framework for Assessing the Sustainability of Soil and Groundwater Remediation (CL:AIRE, 2010);
 - NICOLE Roadmap for Sustainable Remediation (NICOLE, 2010)



Conclusions

- ◆ Recognise the efforts already done

- ◆ Different pieces of legislation
 - Existing Common Ground for managing Contamination
 - RTD needs remaining

- ◆ Need of real integration for more sustainability
 - The Soil – Sediment – Water system and its services!
 - Need for sustainable land use and integrated management of the soil-sediment-water system

- ◆ Better common understanding/ building consensus

◆ Thanks for your attention!



More information on:
www.commonforum.eu
www.iccl.ch